THE PRACTICE AND CHALLENGES OF SUBCONTRACTING TO MICRO AND SMALL ENTERPRISES: THE CASE OF ADDIS ABABA PUBLIC BUILDINGS

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By

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DECLARATION

I hereby declare that this independent project entitled **"The Practice and Challenges of Subcontracting to Micro and Small Enterprises: The Case of Addis Ababa Public Buildings"** was composed by myself, that the work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted, in whole or in part, for any other degree or processional qualification.

	Signature	**Date**
Name: Hurji Anbessie	_____	____ / ___ /____

CERTIFICATE

This is to certify that the independent project prepared by **Mr. Hurji Anbessie** entitled **"The Practice and Challenges of Subcontracting to Micro and Small Enterprises: The Case of Addis Ababa Public Buildings"** and submitted in fulfilment of the requirements for the Degree of Master of Engineering complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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ABSTRACT

Building construction requires a wide range specialty subcontractor for accomplishing project objectives. The stakeholder in public building construction of Addis Ababa includes clients, contractors, government consultants and micro and small enterprises firms working as sub-contractors. Despite their contribution to economic development and job opportunity creation micro and small enterprises contractors face a number of problems caused by stakeholders of the construction industry. This study aimed to assess the practice, challenges and develop approach for selection of MSEs (micro and small enterprises) contractors who are working as subcontractors in Addis Ababa public building construction industry. The data collection method used was made by integrated questionnaire survey and case studies. Samples for the study have been randomly selected from a clustered group of stakeholders who are actively participating in construction industry. In the analysis, the "Mean Score" method is adopted to establish the relative importance of the challenges and a theory of multi-parameter approach model incorporating a number of selection criteria was developed based on the challenges faced. The SPSS (Statistical Package for the Social Sciences) was used to analyze the questioner and Microsoft Excel was used to present the results and develop a selection evaluation model for MSEs contractors.

In the public construction industry a significant portion of the project work are given to MSEs in different trade even though they don't have a certain specialization by using both fixed price and tender system with a unique contractual relationship of stakeholders to that of other countries practice. The main challenges faced in the public building construction include MSEs attitude of dependency syndrome, unrealistic low contract price, lack of work quality, main contractor lack of managerial skill, lack of direct contract between main contract and government consultant fixing unrealistic contract time which consider all micro and small enterprises. Taking the challenge faced in the industry in to consideration a selection criteria model is developed for the technical evaluate of MSEs contractors.

Key Words: Micro and small enterprises, Subcontractor, Public Building, Attitude, Contract price.

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ABBREVIATIONS

AACB	Addis Ababa construction Bureau
CBE	Commercial Bank of Ethiopia
Cidb	Construction industry development board
EEA	Ethiopian Economics Association
EU	European Union
FeMSEDA	Federal Micro and Small Enterprise Development Agency
GTP	Growth and Transformation Plan
MoFED	Ministry of Finance and Economic Development
MoUDH	Ministry of Urban Development and Housing
MoWUD	Ministry of Works and Urban Development
MSEs	Micro and Small Enterprises
PPA	Public Procurement Agency
SPSS	Statistical package for social science
UNIDO	United Nations International Development Organization

CHAPTER ONE
INTRODUCTION

1.1. GENERAL

Construction industry has played and continues to play extremely dominant and salient part in the economy of every nation. The industry also attains socio-economic growth such as the provision of shelter, infrastructure and employment [Anaman and Osei, 2007].

According to Assefa (2014) Ethiopia has adopted the national Micro and Small Enterprise (MSEs) Development Strategy for the first time in November 1997 and the main focus of the government has been to creating job opportunities through MSEs development, to reducing unemployment and alleviate poverty and enhancing MSEs to be base for development. According to Proclamation No. 35/2012 the Addis Ababa City Government Executive and Municipal Service Organs Reestablishment Proclamation Micro and Small Scale Enterprises Development Bureau are accountable to the Mayor with Powers and Function of expansion of MSEs in the City, facilitate conditions for supporting the MSEs by establishing relationship with Governmental and Non-Governmental organizations in the City, conduct studies on micro and small scale projects, facilitate conditions for the establishment of MSEs training centres, preparation of training programs and facilitate condition to obtain financial and loan services.

According to the Federal Micro and Small Scale Enterprise Development Agency (FeMESDA), a total 271,519 new MSEs were established in 2014/15 which employed about 2.8 million people [NBE, 2016]. The construction sector provided the largest share of the jobs created (MoUDH, 2016).MSEs contractors are instruments to generate greater

employment and powerful propellant effect for rapid economic growth in the infrastructure development [Addisu, 2013].According to Berihu *etal* (2014) government infrastructure development projects have targeted creating opportunities for MSEs in construction project.

The consulting company and counterpart for design and supervision of construction works was established in 1966 EC named infrastructure development Bureau and then amended as Addis Ababa housing and construction Bureau and currently under construction ministry it's named Addis Ababa construction Bureau (AACB).One of the Bureau responsibility is supervision and following up of government projects. In the year 2009 EC in Sub city level it has 466 constructions projects and of this projects it has completed 323 projects and the remaining are in progress at different level [AACB plan, 2017].

On many building construction projects, it is common for subcontractors to perform significant portions of the works (Hinze and Tracey, 1994). According AACB plan (2017) has planned to create 25,000 jobs for MSEs and has achieved to create 23,137 jobs for MSEs in the year 2009 EC, this created jobs by amount are 268,891,131(Two Hundred Sixty Eight Million Eight Hundred Ninety One Townsend One Hundred Thirty One).

According to AACB modified construction rules and regulation (2014) there are a number of challenges in public building construction industry of Addis Ababa such as construction quality problem, timely completion of projects, skill problem, knowledge of the regulation and shortage of researches paper are the major challenges.

1.2. PROBLEM STATEMENT

In Addis Ababa MSEs contractors face a number of problems ranging from those caused by clients, consultants, institutional weaknesses despite their contribution to economic development and job opportunity creation. These problems are obstacle to the growth and development of SMEs [Weldegbriel, 2012].

According to Maturana *etal* (2007) even though concept of subcontractor management has been found to yield encouraging outcomes when performed effectively, likewise there is the possibility of disrupting project success if not properly performed.

According to AACB report (2017) Addis Ababa Construction Bureau has suspended registration certificate of MSEs contractors which are working as sub-contractors in s/city Administration (forty five MSEs contractors from Akaki S/City, sixteen MSEs contractors from Bole S/City, eleven MSEs contractors from Kirkos S/City, ten MSEs contractors from Addis Ketema S/City, six MSEs contractors from Nifas Silk Lafto S/City and three MSEs contractors from Yeka S/City) of those who failed to perform as of per the contract leaving aside the benefit in connection with time and cost.

The Addis Ababa public building construction industry may not achieve the utmost benefit from subcontractors work to MSEs which has received little prior research attention as the limited number of articles on sub-contracting. The practice where works are sub-contracted to MSEs is a new strategy of creating job opportunity in Addis Ababa public building construction industry. This strategy faces many challenges because in the past contractors are used of executing all trends of work by themselves.

1.3. OBJECTIVE OF THE RESEARCH

1.3.1. General Objective

The main objective of this study is: -

Asses the practice, challenges of subcontracting to Micro and Small Enterprises and develop approach for selection in Addis Ababa public building project.

1.3.2. Specific Objective

The specific objectives of this study are

- To assess the practice of Micro and Small Enterprises in Addis Ababa public building projects
- To identify challenges of Micro and Small Enterprises in relation with subcontracting works in Addis Ababa public building projects.
- To develop approach for Micro and Small Enterprises contractor selection in Addis Ababa public building projects.

1.4. RESEARCH QUESTIONS

- What is the practice of Micro and Small Enterprises in Addis Ababa government public building projects?

- What are the challenges of Micro and Small Enterprises in relation with subcontracting works in Addis Ababa government public building projects?

1.5. SIGNIFICANCE OF RESEARCH

Building construction requires a wide range specialty subcontractor for accomplishing project objectives. Owners usually engage construction managers or general contractors to coordinate the activities of a project and to accomplish project objectives successfully. Construction managers on the other hand, utilize the skills of subcontractors in order to minimize costs and to complete a project within the stipulated time and quality prescribed.

The construction industry relies on subcontracting for the majority of its production effort. Hence the construction industry comprises a large number of MSEs that operate in a subordinate productive role to larger 'main' contractors [Martin, 2003].

Determining of the challenge and practice faced by sub-contracting to MSEs Construction firms will be helpful in improvement the practices by assessing the challenges. Thus, the findings of this study, when implemented, will lead to closer collaboration between client, main contractors, consultant and MSEs construction firms for efficient project execution.

1.6. SCOPE OF THE RESEARCH

This thesis assesses the practice and challenges of subcontracting works to MSEs in Addis Ababa public building projects. The extent of this study would be narrowed to Addis Ababa government building projects, being the city with the largest concentration of public building projects and construction professionals. Furthermore, this location has been selected due to its proximity and convenience for the researcher.

This study does not include all types of construction projects by making the focuses on the subcontractors works given to MSEs construction firms in Addis Ababa which are working in government public buildings. The work consists of electrical, Sanitary, finishing, metal etc .The study also considered the client, main contractors and government consultancy firms who are working with MSEs construction firms.

1.7. LIMITATION OF THE STUDY

Difficulties faced in the course of conducting the research were persuasion to get the target respondents to agree to be part of the survey and this had an impact on the response rate. Besides, the likelihood of sampling and measurement errors and the effects of these errors on the data collected cannot be underestimated.

CHAPTER TWO
LITERATURE REVIEW

2.1. INTRODUCTION

This chapter presents a review of appropriate literature on MSEs and subcontracting in the construction industry. It sets off by defining MSEs and asses the overview and challenges they face in the construction industry. It then presents the definition and reason of subcontracting along with the challenges they face in the construction industry.

2.2. DEFINITIONS OF MICRO AND SMALL ENTERPRISES

According to Abraham (2013) the criteria used to define enterprises is based on different conditions, among the criteria used to define enterprises, the most common and widely used ones include the number of paid employees by the sector, the amount of paid-up capital, total assets, volume of sales, and value added or net worth.

There is still confusion among different governmental organizations like Ministry of trade and industry, Central Statistics Agency and Federal Micro and Small Enterprises Development Agency (FeMSEDA) in defining MSEs [Berihu *etal*, 2014].

The old definition of MSEs by FeMSEDA (1997) is based on paid capital only as shown in the table below.

Table 2. 1: Definition of MSEs (Source: FeMSEDA, 1997)

Sector	Manpower	Paid up capital
Micro Enterprise	-	< 20,000 ETB
Small Enterprise	-	< 500,000 ETB

The new definition considers human capital and asset as the main measures as shown in the table below. The new definition addresses the limitations of the old definition. Minimum asset requirement for services and industry is different as shown in table below.

Table 2. 2: Definition of MSEs (Source: FeMSEDA, 2011)

Level of Enterprise	Sector	Manpower	Paid up capital
Micro Enterprise	Industry	<5	<100,000ETB
	Service	<5	<50,000 ETB
Small Enterprise	Industry	6-30	<1,500,000 ETB
	Service	6-30	<500,000 ETB

According to Hailay (2003) different countries define MSEs based on category of industry and criteria determine the size of enterprise as shown in the table below.

Table 2. 3: Definition of MSEs in different countries (Source: Hailay, 2003)

Country	Category of industry	Criteria
Ethiopia	Micro enterprise Small and medium enterprise	Investment paid up capital not exceeding Br 20,000 Investment paid up capital Br 20,000-50,000
France	MSE	<500 employees
USA	Very small enterprise	10-499 employees
Indonesia	Micro enterprise Small enterprise Medium enterprise	<20 employees 20-99 employees 100-499 employees
Ghana	Micro enterprise Small enterprise Medium enterprise	1-4 employees 5-29 employees 30-140 employees

2.3. OVERVIEW OF MICRO AND SMALL ENTERPRISES IN ETHIOPIA

According to Ethiopian Economics Association (EEA), most big businesses in Ethiopia have started as small and Micro and have grown to their maturity over long period by cumulating capital and business management experiences [EEA, 2015]. MSEs development hold a strategic place within Ethiopia's Industrial Development Strategy the fact that they are the key instruments of job creation in urban centres, whilst job creation is the centrepiece of the country's development plan [MoUDH, 2016].

According to National Bank of Ethiopia (NBE) annual Report in 2014/15 a total of 271,519 new MSEs were established which employed about 2.8 million people with a loan grant of more than Birr 6.5 billion [NBE, 2015].

According to NBE annual report In 2015/16 alone 190,587 new MSEs were established which employed about 1.7 million people. The number of establishments and the employment created during the review period decreased by 29.8 and 40.3 %, respectively. At the same time, MSEs received more than Birr 5.4 billion in loans which was 18 % lower than a year ago and also states that In terms of regional distribution 44.5 % of the newly established MSE's, were in Amhara followed by Oromia (22.4 %), Tigray (19.7 %), South Nation Nationality and peoples Region (6.6 %) and Addis Ababa (4.2 %)[NBE,2016].

Growth and Transformation Plan (GTP) of Ethiopia for the period 2010/11 to 2014/15 has given due attention to micro and small enterprises and it states that enterprises development is the key industrial policy direction contributing to envisaged structural transformation of the economy, the overall objective and key government policy direction

for this sub sector is to expand the quality and quantity of micro and small enterprises [MoFED, 2010].

2.4. MICRO ENTERPRISES IN THE CONSTRUCTION INDUSTRY

The biggest employment has been generated by the construction sector, accounting, on the average, for about 36.2 % over the four GTP implementation years, followed by services with 20.8 %, trade with 15.2 %, manufacturing with 14.7 % and urban agriculture taking 13.1 % over the four GTP implementation years [EEA, 2015].

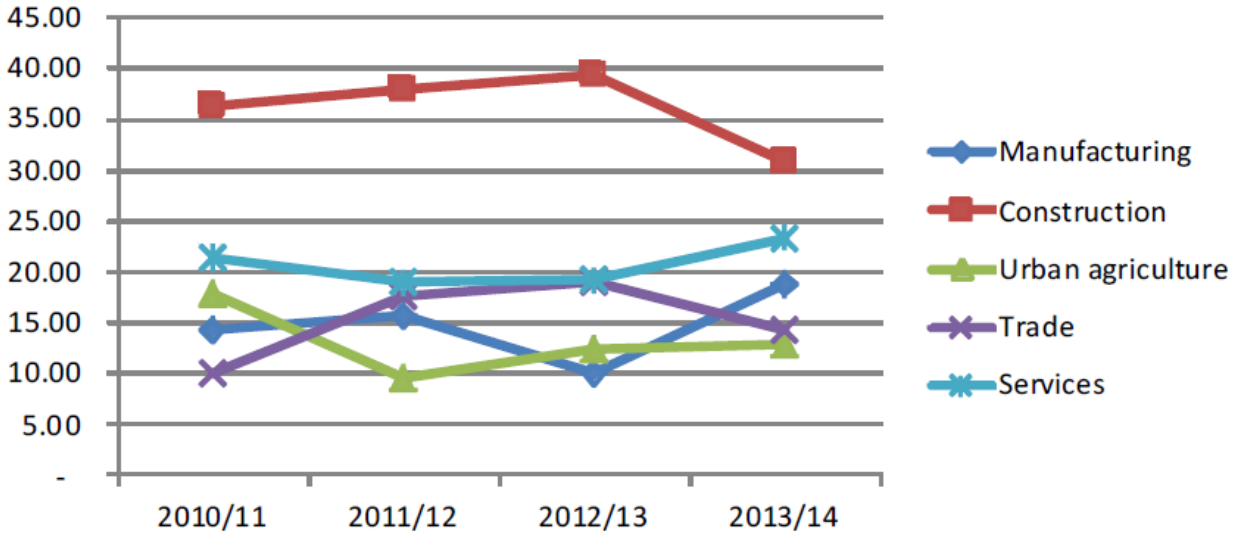

Figure 2. 1: Employment generated in different sectors (Source: FMSEDA, 2015)

According to MoUDH (2016) particular attention shall be given to subsectors, activities and enterprises to be established in the manufacturing, construction, trade, services and agricultural sectors that have a propensity to create large scale employment and listed the construction sub sector as shown in the table .

Table 2. 4: The Micro and Small Enterprise Sectors (Source: MoUDH, 2016)

	Construction Sector
I	Contracting
Ii	Sub-contracting
Iii	Cobble stone works
Iv	Sub-contracting for infrastructure construction

MSEs engaged in manufacturing and construction sectors shall be supported to enter into subcontracting arrangements with medium and large enterprises [MoUDH, 2016].

2.5. CHALLENGES FACED BY MICRO AND SMALL ENTERPRISES

According to Assefa (2014) despite the fact that MSEs have exhibited remarkable achievement in contributing for community development by boosting the community capital to enable the community to unleash their resources, they have a number of challenges they face to fully operate and bring change.

Abraham (2013) states that there are a number of constraints which hinder the performance of micro enterprises These include lack of entrepreneurial skill of the operators, low amount of initial capital to inter into the business, low experience of managers in overall managerial activity, low education level of the operators, limited access to training to initiate and capture knowledge, limited access to market to exchange their products and services, low age of enterprises stay in the business, low level attained age of operators and improper number of employees in the enterprises.

2.5.1. Financial Problems

Berihu *etal* (2014) stated key constraints to MSEs growth is accesses to finance regarding access to finance, the problems are two.

- First, supply of credit is much smaller than demand. Micro Finance Institutionshave only met about 50% of the demand for finance.
- Second, given that the prices of goods and services have been increasing, the real value of the loan is so small and does not provide MSEs much leverage. And states MoUDH, conducted a national survey of over 3000 sample MSEs. In the survey, the MSEs were inquired to identify the major business constraints hampering their business. Access to finance tops the constraint list where 37.7% of the MSEs reported it as a key constraint.
- Collateral challenges a proposed directive on loan provision for SMEs hinges because collaterals are crucial to ascertain that MSEs serve their debt on time.

According to Addisu (2013) and MoUDH (2016) the challenge faced by MSEs face financing problems. This finance problem is mostly due to late payment by clients and lack of advance working capital [Addisu, 2013].

2.5.2. Corruption

According to Addisu (2013) the challenge faced by MSEs is prevalence of unethical conduct amongst some of the stakeholders.MoUDH (2016) states that one of the challenges inhibit the development of MSEs that undermine the growth of MSEs is corruption, which are manifested itself in different forms and the practice of selling poor

quality products and the desire to make quick profits.MSEs growth marketing challenges is rent seeking behaviours observed on both the MSEs and the government Bureau officials have exacerbated the market linkage problems [Berihu *etal* ,2014].

2.5.3. An Attitudinal Challenge

Berihu *etal* (2014) stated key constraints to MSEs growth is attitudinal challenge of thought considers the increase in the number of MSEs as a sign of failure of the economy to provide productive jobs; the sector is the last option which gives the bare minimum for subsistence support. People with no hope of finding formal employment are forced to engage in MSEs. It is considered as a place of last resort with little probability for improvement. Attitudinal problems of the private sector towards MSEs are reflected more importantly in the way that MSEs are crowding out the private investors. This is more visible in the construction sector. Massive government infrastructure development projects have targeted creating opportunities for MSEs. This has created the sense that MSEs are favoured by the government leaving the private investors as bystanders. The various governmental support packages that prioritize MSEs have left the private investors to be more antagonistic towards MSEs.

MoUDH (2016) states that there are several challenges inhibit the development of MSEs that undermine the growth of MSEs one of the challenge is negative attitude towards MSEs and takes different manifestations of which the most important are.

- Lack of knowledge of the potential of MSEs. The attitude that considers engagement in MSEs a sign of poverty and backwardness and discounts their

potential role because of this narrow perspective, their size and use of simple technologies, rather than their operations and potential.

- Preference for paid employment: - Most of the graduates from Ethiopia's higher education and technical and vocational training (TVET) institutions seek paid secure employment rather than an entrepreneurial path.
- Dependency:- The dependency syndrome is common and is expressed in an expectation of receiving subsidies and charity rather than working and investing in one's own future.

2.5.4. Challenge Of Skill And Technology

According to MoUDH (2016) and Addisu (2013) one of the challenge faced by MSEs are limited skills in construction management which inhibit the development of MSEs that undermine the growth of MSEs. MSEs don't yet get any training According to [Assefa, 2014].

2.5.5. Other Challenges

Berihu *etal* (2014) stated constraints to MSEs growth are

- Working and sales space constraints.
- Licensing and registration challenges in Ethiopia, all MSEs are formal, properly licensed and subject to paying taxes as per the tax proclamation of the country. According to Addis Ababa micro and small enterprise development Bureau, there are as much if not more informal firms as are formal firms in Addis Ababa.

- Institutional Coordination Problem Ethiopia's MSE policy support is multi-agency about 10 government agencies are involved in the implementation and follow-up of the MSE policy. Consequently, implementation coordination has been a challenge.

According to Assefa (2014) MSEs have a number of challenges that hindered them to fully operate and bring change. Some of them are

- there is poor follow up of the MSE and their supervisions are not supportive,
- market linkage is not enough

Weldegbriel (2012) stated that the major problems facing MSEs in Addis Ababa are lack of business plan, lack of formal and informal association, lack of favorable business environment, high cost and shortage of raw materials, lack of proper institutional support, lack of proper marketing practice, and stiff competition among MSEs in the same business line and Summary of the challenge faced by MSEs

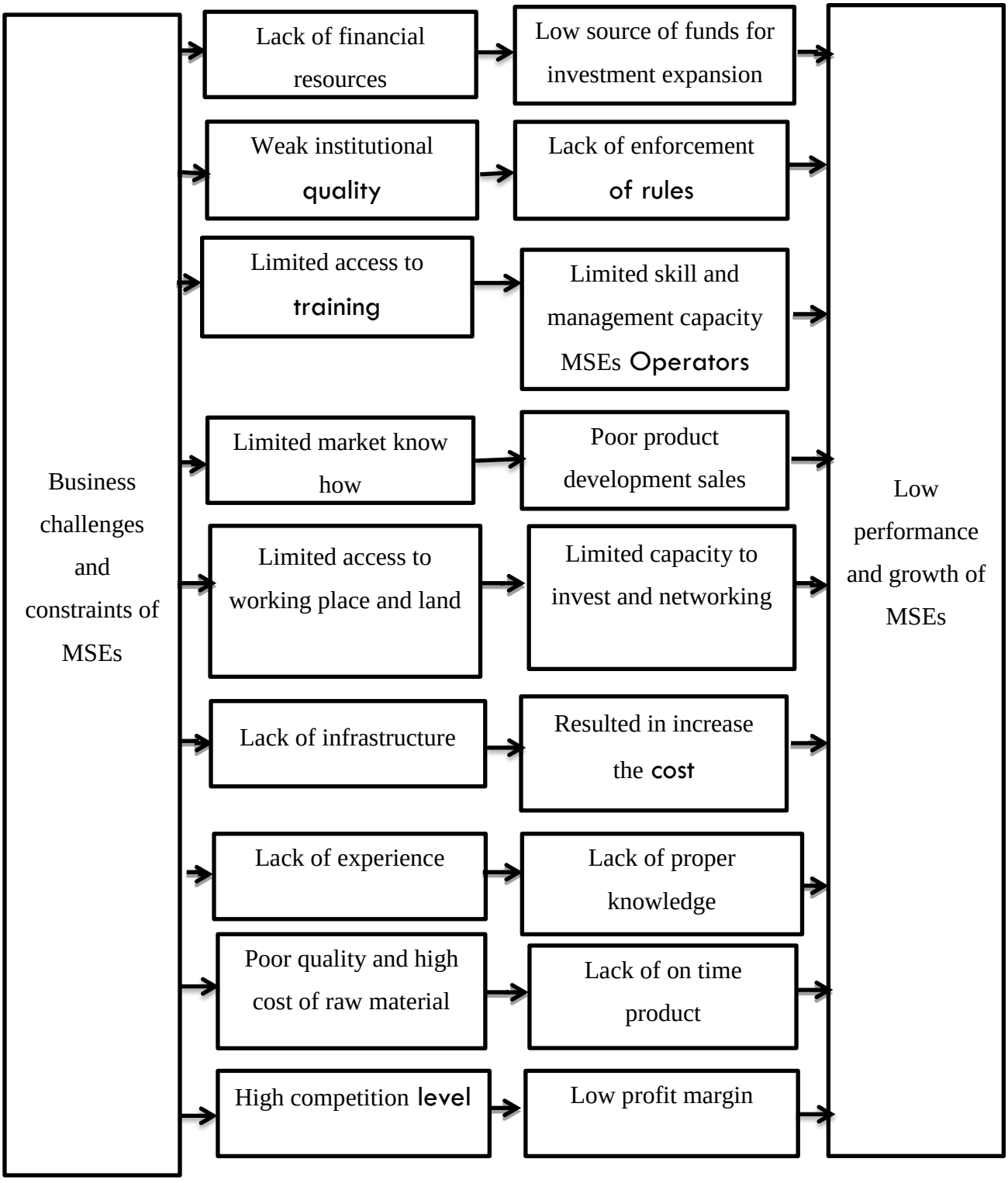

Figure 2. 2: challenge faced by MSEs in Addis Ababa (Source: Weldegbriel, 2012)

2.6. DEFINITION OF SUBCONTRACTOR

Sub-contractor as per the Civil Code of Ethiopia, under the Administrative Part of the Code, has been defined as a contract whereby the party having contracted with the administrative authorities substitutes a third party for himself for the performance by the latter of a part only or of an item of the contract. While PPA (2011) have defined sub-contracting as means any natural person, private or government entity, or a combination of the above, including its legal successors or permitted assigns who has a contract with the contractor to carry out a part of the work in the contract, which includes work on the Site.

A construction subcontractor is that organisation that enters into a contract with a client or a general contractor to execute some portions of work for the main contractor (Richard, 2016). Fah (2006) defined subcontractor as one who enters into a subcontract; individual or company that is hired to perform part of the work under main contractor but who have no direct contractual relationship with client. Sub-contractor is an individual or organization that typically contracts with a general contractor to perform a specified part of the work the subcontractor may directly hire craft personnel to perform the work or use a subcontractor [Nasyrah, 2013].

According to EU SMEs and sub-contracting report (2009) and Cidb (2013) subcontracting is a business strategy that is used by main contractors to deal with uncertainties to reduce operating costs and thereby enhancing competitiveness the construction market and to transfer risks, such as financial risks, completion risks and responsibility for employees.

2.7. REASON SUBCONTRACTING

EU SMEs and sub-contracting report (2009)states that the reasons behind subcontracting have a number of different reasons for subcontracting which may include lack of in-house capacity, need for accessing external expertise/technology and financial reasons.

According to Hinzeand Tracey (1994) construction projects are normally awarded to general contractors or prime contractors, who intend sublet their works out to specialize outside firm to perform specific project activities.

Subcontracting reduces direct costs and overheads, and allows main contractors to use more competitive local firms with their lower overhead costs and better knowledge of the local market conditions, practices and procedures [Cidb, 2013].

According to Cidb (2013) the main contractors gave the following as their reasons for subcontracting out work:

- giving specialist works to contractors who are best competent to perform it, especially where the main contractor does not have the required competence to execute the work;
- the reduction of overheads and staff requirements in an environment of increasingly stiff competition, thin margins and onerous labour employment regulations; and
- the need to comply with contract conditions stipulating the employment of local labour.

While Subcontractors on the other hand are drawn to subcontracting opportunities because of the following factors:

- the need to access work opportunities in a highly competitive market;
- practicing their specialist trades that are traditionally reduced to subcontracts on major construction works, e.g. electrical and plumbing subcontractors; and
- building a track record for improving their grading Register of Contractors

The reason of sub-contracting is that contractors have the human and technical resources to manufacture the specific component, part or material but not enough capacity to undertake it. In addition, enterprises may resort to subcontracting in order to use specific subcontractor's equipment and skills for requiring a high level of technical expertise that the main contractor does not possess or cannot meet [EU SMEs and sub-contracting report**,** 2009].

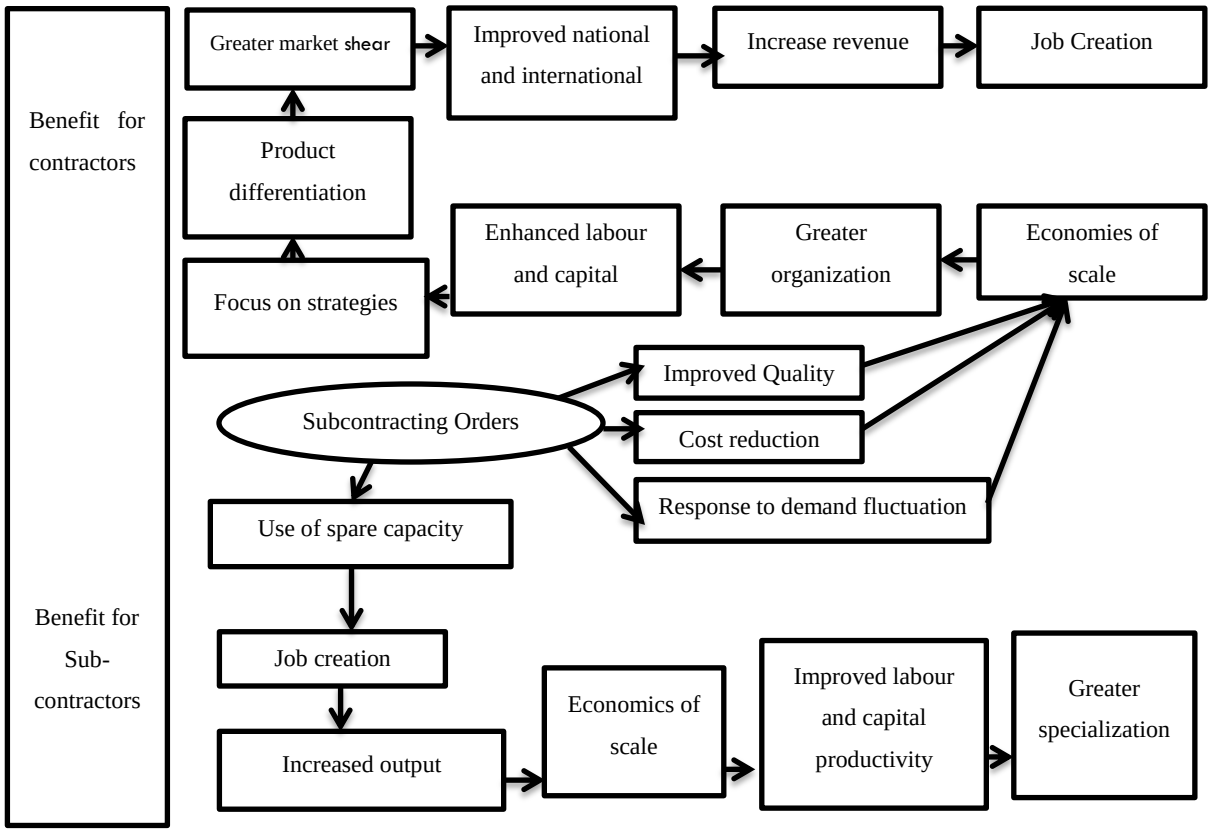

Figure 2. 3: Benefit for contractors and sub-contractors (Source: UNIDO, 2003)

Francis *et al* (2006) stated that the key characteristics of specialist subcontract works include:

- The need for input of specialist knowledge and skills by the specialist subcontractor;
- The need for special methods or equipment of the subcontractor for work execution;
- The works comprise proprietary products supplied by the subcontractor; and
- The works can only be carried out by the subcontractor who is licensed or can deploy licensed persons to carry out the work.

2.8. CLASSIFICATION OF SUBCONTRACTORS

2.8.1. Based On Appointment

According to Mbachu (2008) from a contractual point of view, subcontractors can be categorized as:

- domestic subcontractors; those hired by the contractor to perform specific tasks;
- selected subcontractors; subcontractors solicited from a recommended list of potential subcontractors in the tender documents; and
- nominated subcontractors; nominated by the client or client's agent to undertake specified aspects of the main contract

According to MoWUD (1994) defines nominated sub-contractor as specialist, merchants, tradesmen and others executing any work or supplying any goods, materials or services for which provisional sums are included in the Contract, who may have been or be nominated or selected or approved by the Employer or the Engineer, and all persons to whom by virtue of the provisions of the Contract the Contractor is required to sublet any work shall, in the execution of such work or the supply of such goods, materials or services, be deemed to be sub-contractors employed by the contractor and are referred to in this Contract as "Nominated Sub-contractors".

2.8.2. Based On Construction Sector

Hinzeand Tracey (1994) stated that the main categories of subcontractors can generally be identified in the construction sector are.

- specialist subcontractors; those that undertake specialist services, especially building or engineering services such as electrical, plumbing and heating, ventilating and air-conditioning.
- generalist and specialist trade subcontractors; those that offer general trade services or specialize on specific trades such as painting and brickwork– many of which are general contractors that use subcontracting as a means to get work during periods of tough competition but can and often prefer to work as main contractors;; and
- labour-only subcontractors; i.e. skilled tradesmen that provide labour-only services, while the main contractor provides the materials and supervision.

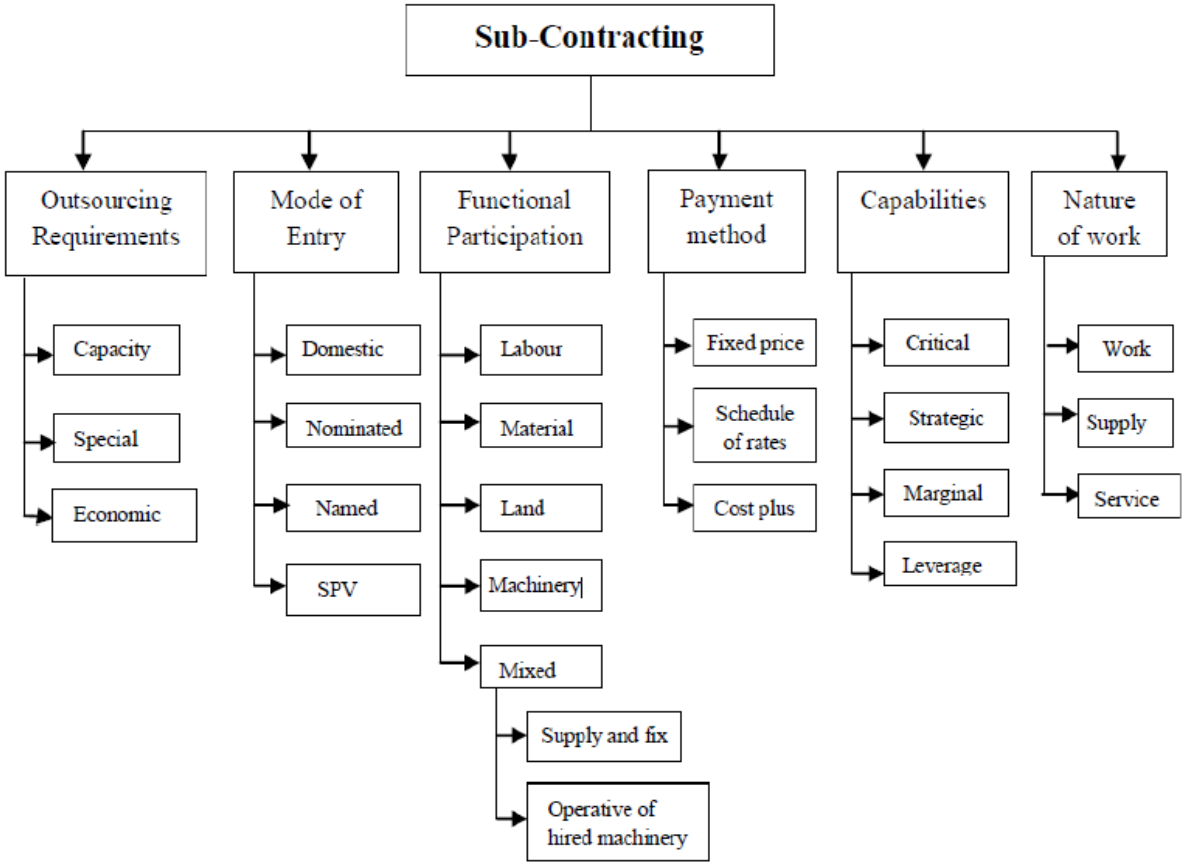

Figure 2. 4**:** Subcontracting categories (Source: Yin *et al*., 2009)

2.9. CHALLENGES WHEN SUBCONTRACTOR WORKS

The construction industry has been criticised to be highly fragmented, with adversarial relations among the players (clients, contractors and subcontractors). Such a situation would arise as multiple, potentially conflicting interest parties are summoned through contracts to undertake works that are interdependent [Newcombe, 1996].

According to Ng and Tang (2009) subcontractors are a vital component of the success of every construction project. The factors affecting the performance of subcontractors are classified, as those related to the project or an organization and on another hand, there are important factors affecting the performance of the subcontractors. These factors include management level leadership, timely completion of project, profit, staff qualification/skill, reputation, payment method, company history, and project procurement method, safety, bidding method, insurance, bond and relationship with main contractors.

2.9.1. Managerial Skills

According to Maturana (2007), a very momentous way in which the subcontractor management procedure has influenced the construction industry is that it has encouraged specialization and helped in transferring risk from the general contractor to the subcontractor and further stated that, subcontractor management has achieved remarkable results when it performed correctly but may also hinder project progress if performed inaccurately.

Poorly implemented subcontractor management responsibility can be attributable to lack of effective planning and coordination. Lack of requisite direction from construction management to subcontractors denies them the prospect to work to the best of their utmost capability. A project requires that subcontractors and subcontractors work together in an interactive manner; however because of the rather short-term nature of interaction period between them, there is little prospect to develop long-term relationships and trust [Vilasini *etal,* 2012].

One of the major challenges that exist when managing subcontractors is that, in most cases, the drive for each party has been to obtain profitability regardless of the adverse effects on other parties, instead of focusing on the overall project goals [Thomas, 2005].

According to Cidb (2013) many subcontractors have weak management practices, especially financial and cash flow management and generally lack business systems affecting their ability to execute work successfully. Contractors were quick to point out that there were clear distinctions between the specialist, usually more established subcontractors who carry out trades such as concreting and tiling and the generalist subcontractor. The more specialized subcontractors often have sophisticated and well established business management systems lacking amongst generalist subcontractors.

2.9.2. Payment Issue

According to Sears *et al*. (2008) general contractors are found of delaying payment to their subcontractors for completed work. General contractor may have the contractual right to withhold payments for many reasons but this could be a major source of disputes between the subcontractor and general contractor. Arditi and Chotibhongs (2005)

explained that the major cause of disagreements and disputes between main contractor and subcontractors is delayed payments from the main contractors to subcontractors.

Richard (2016) has noted that one of the most crucial ingredients in fostering closer relationship between a contractor and his subcontractor in the long-term is timely payment to the latter and that each party is always overly suspicious in all business dealings with the other party due to lack of trust. The relationship between the two could be seriously mired if the main contractor is perceived a poor paymaster.

According to Cidb (2013) delayed payments, whether from the main contractors or from the client, are seen as the most critical issue facing subcontractors in the industry. As many subcontractors are small companies that often rely on prompt payment to maintain their cash flows and work progress, delayed payments often delay progress, causes problems with suppliers and in some cases result in bankruptcy. Main contractors are not obliged to provide payment guarantees or surety for subcontractors as they rarely receive these themselves from the client. The "pay-when-paid" practice that is prevalent in the industry affects subcontractors more as they "cannot absorb the punches that main contractors can".

2.9.3. Subcontractors Qualification And Experience

Ng *et al*. (2003) noted that when incapable or inexperienced subcontractors are employed, the quality of final construction product could be sacrificed. According to Richard (2016), the performance and excellence of the subcontractor's project team affect the project outcome with respect to quality and timely delivery, thus a key determinant of a project's economic performance.

Ng and Tang (2009) have concluded that the skill level of the workers of the subcontractor's construction team has a direct relationship with the quality of completed works achieved in a construction project.

2.9.4. Effectiveness of Communication

Richard (2016) stated that proper communication among all project participants has been cited as vital and crucial to the timely project completion, noted that successful executing of a construction project is subject to effective communication among project participants. They further revealed that the main challenges in communication and coordination during construction include growing errors in communication due to multiple subcontractors, difficulty in pertinent information flow among multi-layer subcontractors, poor communication channel between main contractor and subcontractor; and absence of main contractor‘s medication on disagreements amid subcontractors.

According to Huang *etal* (2008) the problems in communication might bring about serious inefficiencies such as improper planning and scheduling and absence of appropriate information update system.

2.9.5. Challenge of Contractual Issues

When a general contractor is considering a certain subcontractor for a project, the two parties typically enter into a subcontract negotiation phase. Although the particular subcontract form may vary between contractors, there are a few common areas of contention that can arise before a satisfactory agreement can be reached. Many general

contractors consider the subcontract terms to be non-negotiable so this can put the subcontractor in a difficult position [Clough *etal*, 2005].

2.9.6. Future Work/Types of Work Prospects

Subcontractors rely on general contractors for virtually all of their work. General contractors typically notify subcontractors about new bidding opportunities for future work [Sears *etal*, 2008].

2.9.7. Superintendent Capability

Subcontractors depend on the superintendent to interpret the drawings when there is conflicting information or when clarifications are needed. Increasingly, some general contractors consider this to be the responsibility of the subcontractor and they do not take the lead to resolve issues as they arise on the jobsite [Gould *etal*, 2009].

2.9.8. Financial Capacity Of The General Contractor

It is the primary importance to the subcontractor that the general contractors they work with are financially sound. This is especially relevant to smaller contractors since they could face bankruptcy if they suffer large losses on a single job [Chester, 2005].

2.9.9. Bid Price Pressure From Main Contractors

According to Cidb (2013) the high competition in the industry results in many contractors pricing their tenders low to win work and then seeking ways to make profits from on-going projects by squeezing subcontractors to the lowest possible bid price. These low margins often result in poor quality work, time delays, disputes, and losses on projects.

2.9.10. Poor Attitudes

According to Cidb (2013) a number of subcontractors, many of whom are often new to join the construction industry, have a materialistic attitude and "are only in it to make a quick buck". Main contractors feel this is wrong as it leads to cutting corners on technical quality, poor treatment of labour and suppliers and is ultimately unsustainable. According to the contractors poor attitudes are however not exclusive to the subcontractors, but are symptomatic of the entire construction industry.

2.9.11. SAFETY REQUIREMENTS

Because the general contractor typically bears the burden to ensure the safety on the jobsite, virtually all general contractors require that their subcontractors actively participate in the safety management on the jobsite [Clough *etal*, 2005].

According to Enshassi *etal* (2008) the rate of accident occurrence involving subcontractors 'employees on different construction projects is very high, principally when multiple subcontractors are engaged in one project.

2.9.12. Insufficient Work-Drawings and Specifications

According to Al-Hammad (1992), the ability to execute the construction works effectively, is contingent on the clarity of working drawings and specifications provided. Working with half-finished or vague drawings will create interpretation difficulties, which could result in wrong judgment that influences negatively on the quality of the project and results in disputes between contractors and subcontractors. On their part,

Alinaitwe *etal* (2007) established that interface challenges between main contractor and subcontractor due to incomplete drawing leads to low productivity.

2.9.13. Amendments

It is common for the client to request for an amendment when it becomes necessary to alter the original designs and the specifications. The component cost for executing a specific work section when amendment are made, may be the cause contractor-subcontractor disagreements [Al-Hammad, 1992]. To endorse earlier observations, Enshassi *etal*, (2007) pointed out that design modifications and specifications in the course of construction leads to low productivity. The main contractor-subcontractor interface challenges arise out of low productivity.

CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1. INTRODUCTION

This chapter describes the methodology undertaken to achieve the research objectives. The methodology overall explains the systematic modes, procedures used for collection and analysis of data. Hence, includes information about the research design, sample size, data collection, questionnaire design, questionnaire content, case studies, research ethics, and the method of data processing and analysis.

3.2. RESEARCH DESIGN

The strategy followed in carrying out the research was started with problem identification which has been done through literature review, archival study and informal discussion with colleagues and professionals in the sector; and then the research design was formulated. After that it consists of the following listed phases;

- The first phase of the research is data source and information sources were determined. On the basis of the data and information sources the research instruments were decided; and available documentary sources relevant to the research were reviewed. The review includes books, journal and articles, internet sources and archival document.

- The second phase of the research included a field survey which included the stakeholder in public buildings construction.

- The third phase of the research includes the questionnaire design in consideration of the nature of the research question, qualitative research method is selected for this study as the research questions relates to the personal attitude, opinion and view. Along this a case study was analyzed.

- The fourth phase of the research was questionnaire distribution to the stockholder which includes the Client, Main contractors, MSEs and Government consultants.

- The fifth phase of the research focused on data analysis and discussion. The Statistical Package for the Social Sciences (SPSS) version 20 was used for data analysis and Microsoft Excel was used to present the results.

- The six phase is based on the challenges faced a theory of multi-parameter approach model was developed which incorporating a number of evaluation selection criteria in which a Microsoft Excel was used develop a selection model.

- The last phase of the research included the conclusions and recommendations.

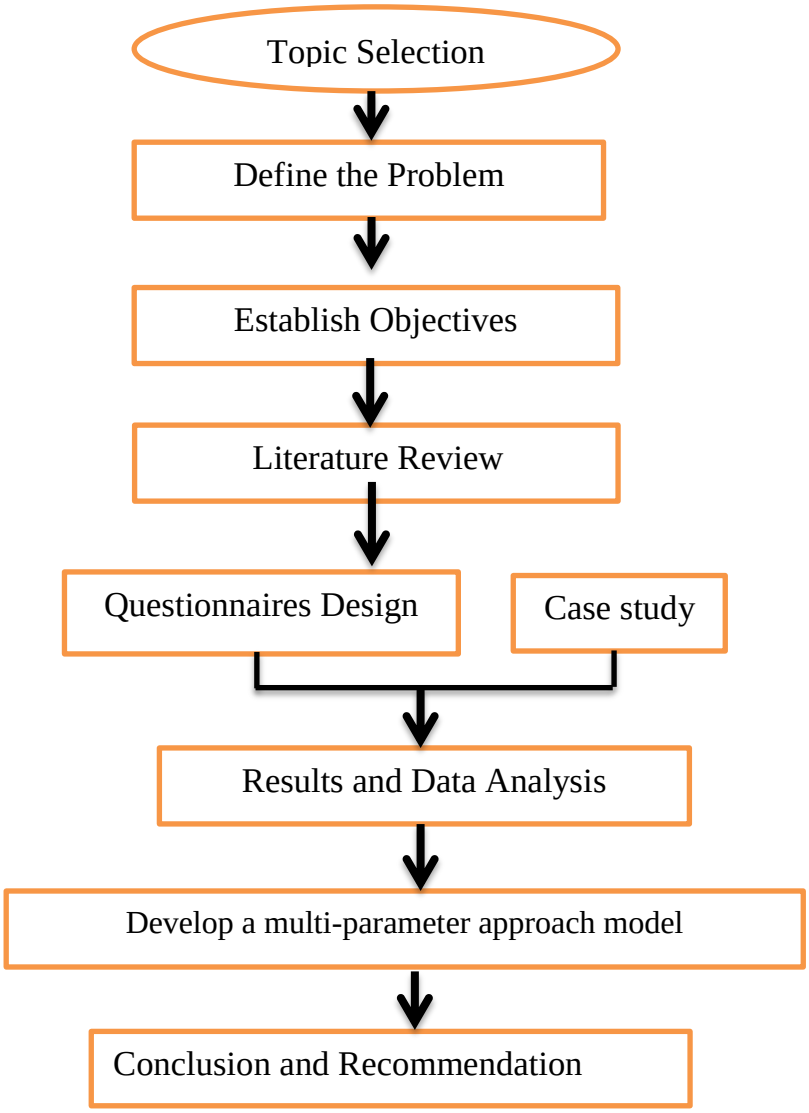

Figure 3. 1: Flow chart of research methodology

3.3. SOURCES OF DATA AND RESEARCH INSTRUMENTS

In this research, the questionnaire approach was used to collect the factual, perceptive and attitudes of the respondents. To assess the practice and identify the challenges faced when MSEs work under the management of main contractor and government consultant in Addis Ababa public building projects, a desk study approach and questionnaire survey were carried out.

The case study was mainly carried out to obtain actual data from the source documents which included the contract documents and determine how MSEs work in a project and claims raised on the project. The other instrument employed was to solicit professional opinion and relevant data through questionnaires.

Through the literature review, key challenges when MSEs work under the management of main contractor and government consultant in Addis Ababa public building projects were identified. The review provided the basis to design the questionnaire which was distributed to professionals involved in the public building program. The developed questionnaires were to address the research objectives having four parts in order of sequence as follows:

- The first set of questions was to categorize respondents to different parties in the public building construction industry that is to classify them under the role of client, MSEs, consultants and main contractor and their experience in the public building construction.

- The second set of question is to determine the extent to which MSEs are working in the public Building Construction Industry.

- The third set of equation is to determine reason of appointing MSEs and the unit pricing system used for MSEs which are working in the public building industry.

- The fourth set of equation is to determine the challenges faced when MSEs work under the management of main contractor and government consultant in public building in relation to subcontracting.

For the questionnaire the respondents were randomly selected from the employer's, contractors, consultants, MSEs and government consultant's professionals who have been involved in the public building projects.

3.4. RESEARCH POPULATION AND SAMPLING

Populations targeted in this research were contractors that are classified under the building categories in Addis Ababa which have valid registration, MSEs, government consultants and clients. As much as possible attempts have been made so that the samples drawn from the population are representatives. Professionals include those reputed experts engaged in the construction industry and were involved in public building construction projects in the near past and are currently working.

A total of Fifty questioners were distributed 15 for MSEs, 10 for client, 10 for contractors and 15 for government consulting Bureaus. The numbers were determined on the basis of the time available for conducting the research work and the reliability of the respondents.

MSEs and government consultant inspectors involvement in a single project is in numbers while main contractor and client are one in a project, this consideration is taken to account in distributing the questioner.

The project case studies are selected in a manner that each project is selected from public building construction sectors where MSEs are working under the management of main contractor and government consultant.

3.5. METHOD OF ANALYSIS

3.5.1. Mean Score

In the analysis, the "Mean Score" method is adopted to establish the relative importance of the challenges faced in public buildings where MSEs work under the supervision of main contractor and government consultant. Scale of ordinal measures of agreement towards each statement (0, 1, 2, 3,4 and 5) is used to calculate the mean score for each factor that is used to determine the relative ranking.

The mean score for each challenge is computed by using the following Formula:

$MS = \Sigma (f \times S)/N$…… Eq. [3.1]

Where:

MS – Mean Score

f – Frequency of responses for each score

S – Scores given to each factor (from 0 to 5)

N – Total number of responses concerning each factor

3.5.2. Multi-Attribute Analysis (MAA)

MAA takes into account a decision alternative with respect to a number of the alternative's attributes. Holt et al., (1994a) stated that a subcontractor's attributes represents one aspect of a decision alternative with respect to a client or project objective.

Attributes may be measured quantitatively. The most basic MAA equation is the 'simple scoring' MAA and can be expressed as:

ACrij=ΣVijWij…… Eq. [3.2]

Where:

ACrj– aggregate score for MSEs Contractor

V – Variable (attribute) i score in respect of MSEs Contractor

W – Weighting indices (W=MS/ΣMS)

n –The number of attributes considered in the analysis

Here the components (Vi and Wi) are denoted by an infinite range of integers, so that a unified aggregate contractor score (designated UACrj, i.e. 0 <UACrj<1) may be reached:

CHAPTER FOUR

ANALYSIS AND DISCUSSION OF RESULTS

4.1. INTRODUCTION

This chapter contains the analysis of the results as obtained from the survey conducted for this study. The collected responses and subsequent analysis of the data acquired through the responses from professionals who are working for the client, consultants and main contractors and micro enterprises involved in public building construction sector in Addis Ababa and data is analyzed by using SPSS and Microsoft Excel.

Descriptive statistics method which took the form of percentages and frequency distributions were used to analyze the background information of the respondents which include type of organization, professional background, years of experience in the profession and type of subcontract projects. The mean score is to identify challenges faced when MSEs work under the management of main contractor and consultant with relation to subcontracting.

4.2. ANALYSIS OF QUESTIONNAIRE RESPONSE

Out of 50 questionnaires, 42 questionnaires were collected which comprises 6 from clients, 15 from consultants, 7 from main contractors and 14 from micro enterprise. This gives a response rate of 84% as shown in Table 4.1 below the breakdown of responses from the various sample groups. An overall response rate of 84% was achieved. This is significant for the purpose of validating the research results.

Table 4. 1: Summary of overall survey response level

Type of respondents	Number of respondents contacted	Questionnaires returned	Percent (%)
Clients	10	6	60
Consultants	15	15	100
Main contractors	10	7	70
MSEs	15	14	93
Total	50	42	84

4.3. ANALYSIS AND DISCUSSION OF RESULTS

In this section, analysis of respondents' understanding and views have been considered and discussed. The responses of the stakeholders to the questionnaire were analyzed and discussed in the section.

4.3.1. General Information

4.3.1.1. Professional background of respondents

The figure 4.1 shows the various professional backgrounds of respondents. The study revealed that 52% of respondents were project manager, 36% of respondents were supervising engineer and the others are 12% of respondents were in a profession other than the mentioned above .This means that respondents for the survey are distributed in terms of their professional background, with the majority being the construction project

managers. The project manager responses are important in the validity of research because the fact that the success of the project highly depends on project manager.

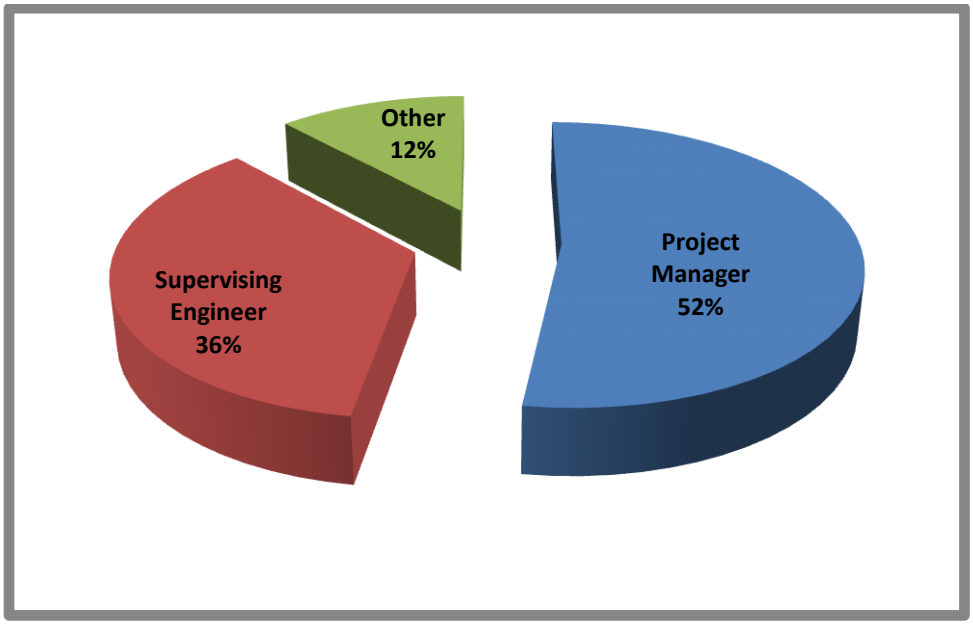

Figure 4. 1: Position of the respondent

4.3.1.2. Year of experience of profession

Figure 4.2 illustrates the years of experience of respondents in their respective professions. The study revealed that 19% of respondents have been in industry between 1 to 5 years, 40% of respondents have been in industry between 6 to 10 years, 31% of respondents have been in industry between 11 to 15 years and the other 10% of respondents have been in industry more than 16 years.

The data collected showed that 80 % of them had more than five year experience. The number of years respondents have been practicing in their profession will affect the quality of responses that will be given and hence increase the validity of this research findings.

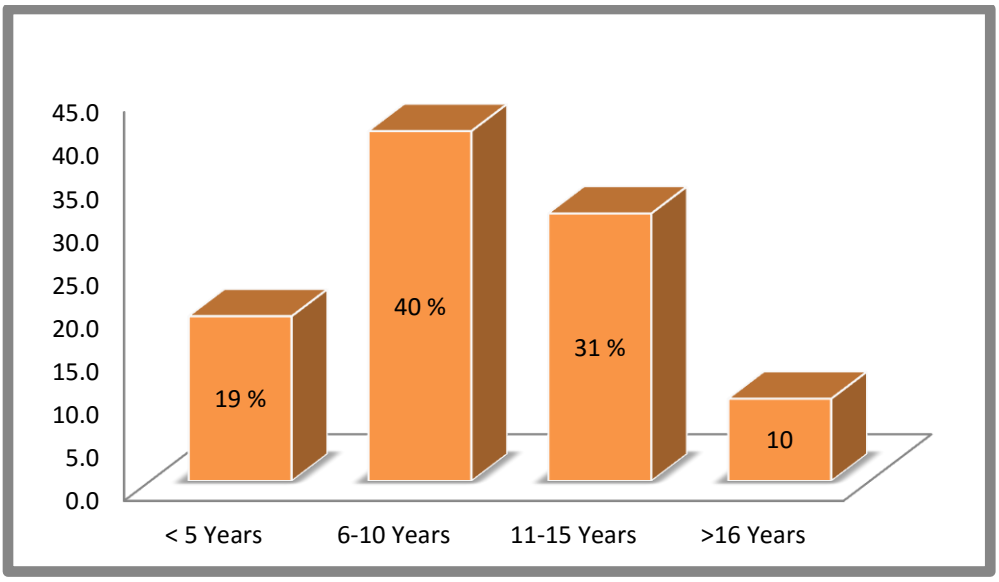

Figure 4. 2: Experience of the respondent

4.3.1.3. Respondents academic background

The purpose of this was to know the educational and professional capability of respondents to undertake the work. The questionnaire was to be completed by respondents who were involved in public building construction works. Figure 4.3 illustrates that 24% of the respondents have MSc/MEng, 55% of the respondents have BSc and 21% of the respondents have diploma. The percentage distribution of the various professionals indicates that the majority of the questionnaires were completed directly by professionals involved in the building construction industry. The survey also shows that it was well represented by qualified professionals in the construction management and these groups of respondents are expected to have plenty of knowledge on the subject matter.

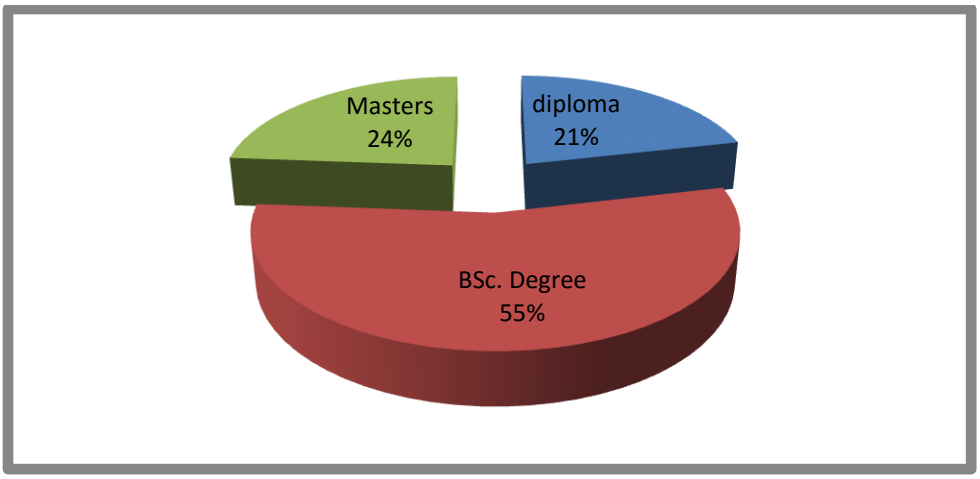

Figure 4. 3: Educational background of respondents

4.3.1.4. Beneficial of micro and small enterprises

Figure 4.4 shows how beneficial are MSEs in construction of public building industry. It was observed that 4.8% of respondents reiterated that it is highly un beneficial, 9.5% of respondents reiterated that it is un beneficial, 23.8% of respondents reiterated that it is moderately beneficial, 47.6% of respondents reiterated that it is beneficial, while 14.3 % of respondents indicated that it is highly beneficial. More than 60% responded that MSEs in construction industry of public building are beneficial.

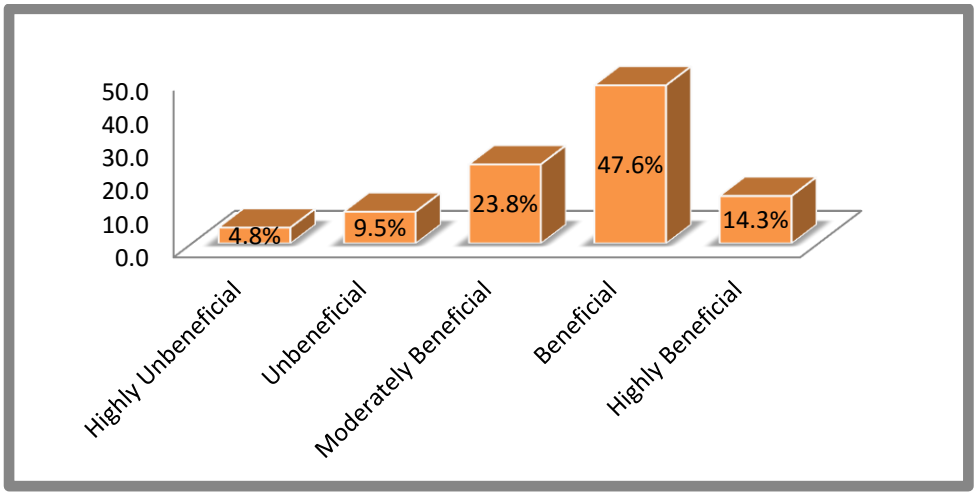

Figure 4. 4: Beneficiary of the Micro and small enterprises

4.3.1.5. Speciality of respondents

Respondents to this question were to MSEs in the construction industry. From Figure 4.5, among the respondents it was realized that 35.3% of respondents were specialized on sanitary works, works, 21.9% of respondents were specialized in electrical works while42.8% of respondents responded to no specialization.

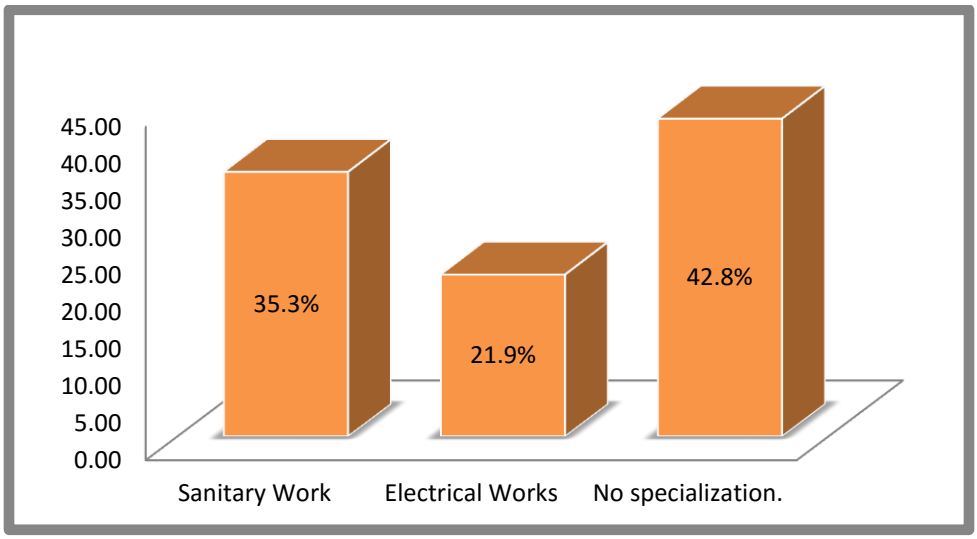

Figure 4. 5: Type of Micro and small enterprises specialization

4.3.1.6. Involvement of micro and small enterprises

Figure 4.6 shows that the project which the questioner received for number of project they have been involved where MSEs are involved within the last five years were 7.4% of respondents has worked with MSEs in about less than five projects, 25.9% of respondents has worked with MSEs in about five to ten projects, 25.9% of respondents has worked with MSEs in about eleven to fifteen projects, while 40.7% of respondents has worked with MSEs in more than sixteen projects.

The data collected showed that 92.59 percent of them had more than five projects experiences with MSEs. The number of project they have encountered will affect the quality of responses that will be given and hence increase the validity of this research findings.

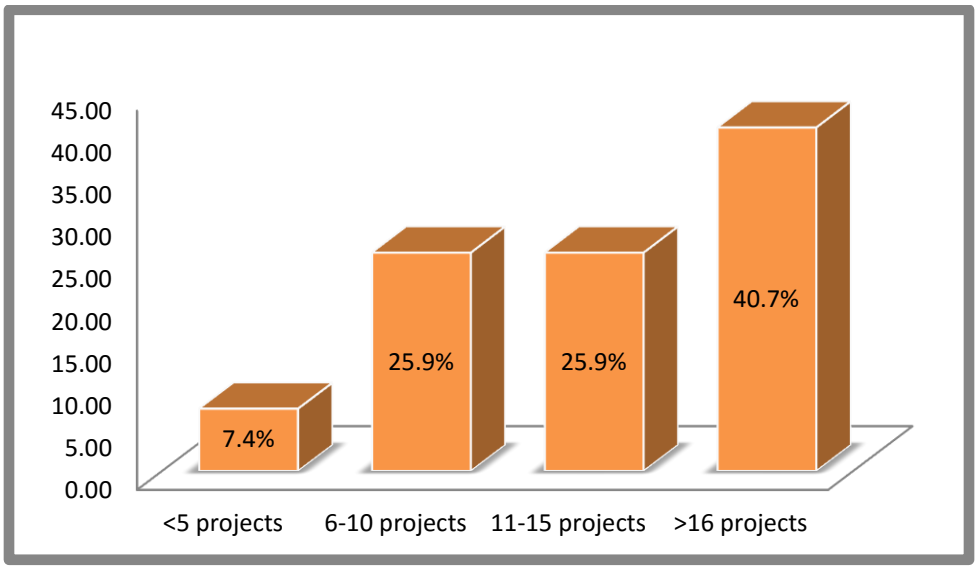

Figure 4. 6: Number of Projects Micro and small enterprises been involved

4.3.1.7. Allow micro and small enterprises to continue their work

The data were gathered from main contractors, consultant and client concerning their approval for MSEs to further continue the works given to them. Figure 4.7 depicts that only 55.56% of respondents would allow micro enterprises to further engage in works, whereas 44.44% of respondents indicated that they don't allow projects to be given to MSEs.

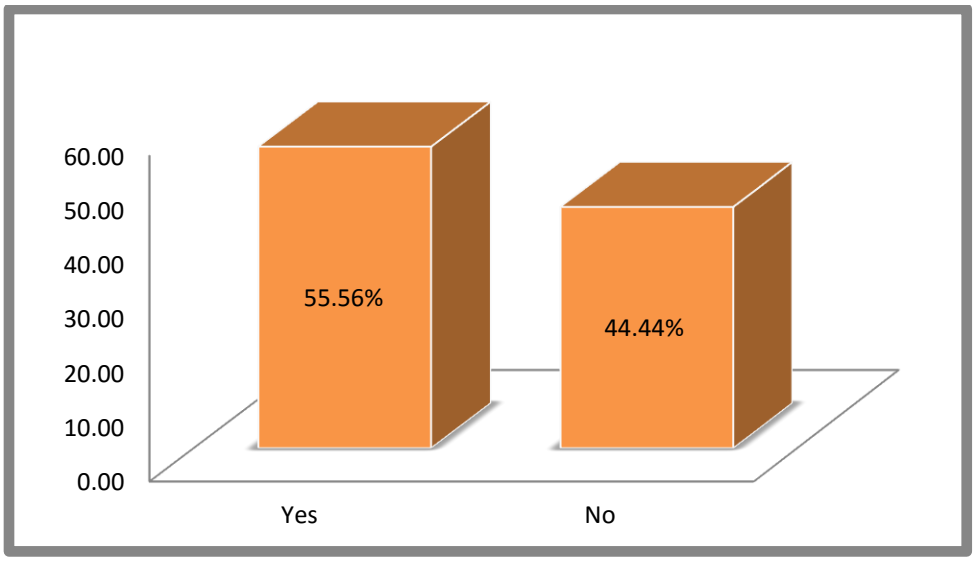

Figure 4. 7: Continue Micro and small enterprises work

4.3.2. Extent of Micro and Small Enterprises

4.3.2.1. Micro and small enterprises work frequently

Figure 4.8 shows the frequently in which MSEs work in public building construction projects were 4.8% responded to not frequent ,9.5% responded less frequent , 14.3% responded moderately frequent, 40.4% responded frequent while 31% responded to very frequent in public building construction projects. MSEs practice was in such frequencies in the public building construction industry.

The findings revealed that MSEs are common occurrence in building projects in Addis Ababa. This showed that 71.1% responded said MSEs are frequently in the construction industry.

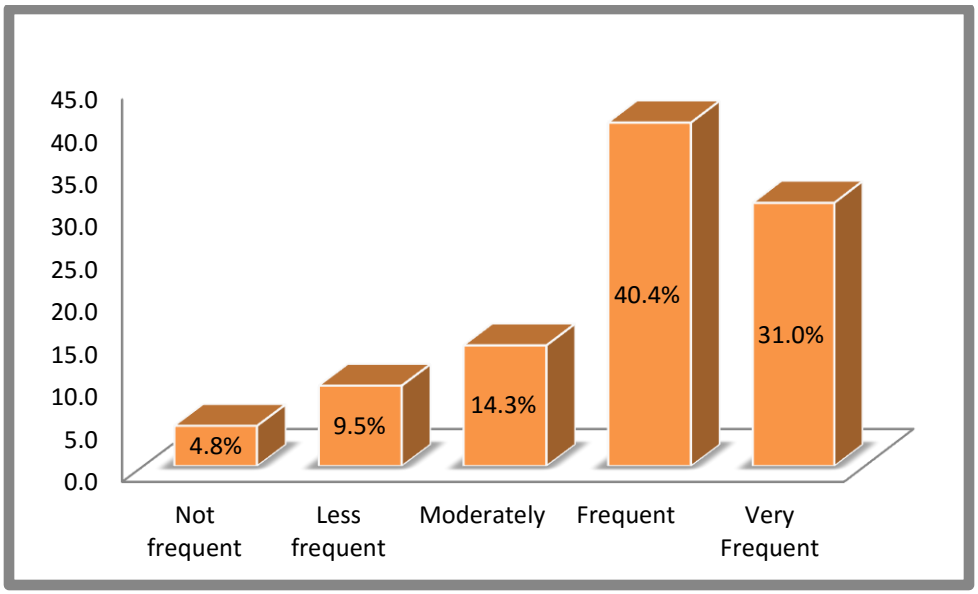

Figure 4. 8: Frequency of MSEs in public Building Construction Project

4.3.2.2. Percentage of work given to micro and small enterprises

Figure 4.9 illustrates the percentage or the volume of projects usually given to MSEs. It was realized that 9.5% of respondents indicated that the percentage of work given to MSEs does not exceed 15%, 2.4% of respondents said that percentage of work given to MSEs is between 16% and 30%, 23.8 % of indicated that the percentage of works or projects given to MSEs was between 31% and 45%,52.4% of indicated that the percentage of works or projects given to MSEs was between 46% and 60% whiles the rest of the respondents who constituted 11.7 % said that the volume of works given to MSEs is greater than 60%.so from this more percent is given to 46% up to 60% this is much more greater than of the stated on Wondwosn (2014)Contractors employed 70% of permanent workforce and MSE employed the rest 30%.

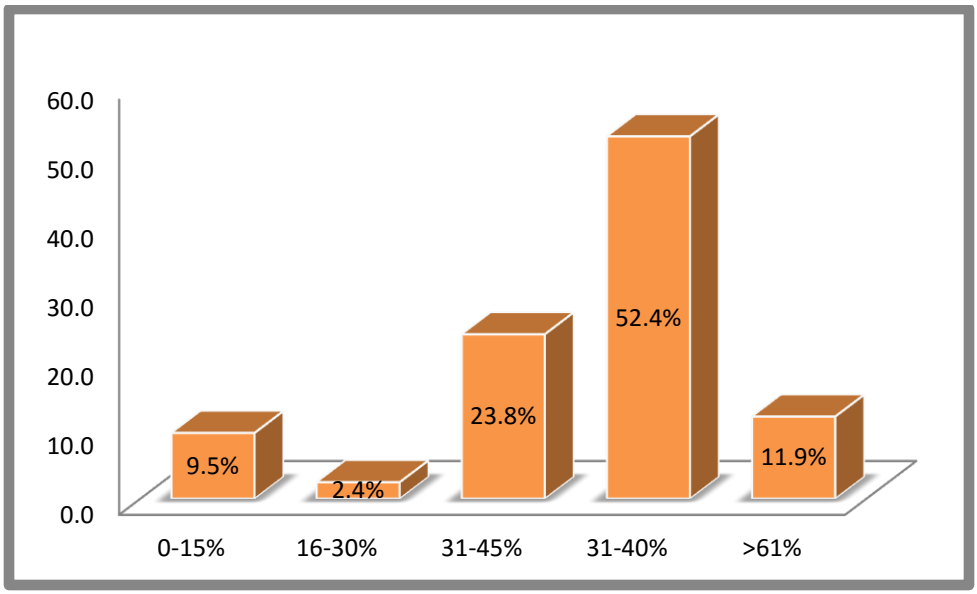

Figure 4. 9: Percentage of MSEs in Building Construction Project

4.3.3. Need and Type of Construction Contract

4.3.3.1.Need of Construction Contract

Figure 4.10 illustrates in percent the reason of giving works to MSEs under the management of main contractor and government consultant MSEs. It was realized that 31% of respondents gave a reason of need for special expertise, 2.4% of respondents gave a reason of reduces direct costs and overheads,19% of respondents gave a reason of ease financial and workload pressures of main contractor and 47.6% of respondents gave a reason of Part of the Transformation Plan of Ethiopia.

This differs from Francis (2006)stated that the reason of specialist subcontract works are need for input of specialist knowledge and skills by the specialist subcontractor, the need for special methods or equipment of the subcontractor for work execution, the works comprise proprietary products supplied by the subcontractor and the works can only be

carried out by the subcontractor who is licensed or can deploy licensed persons to carry out the work.

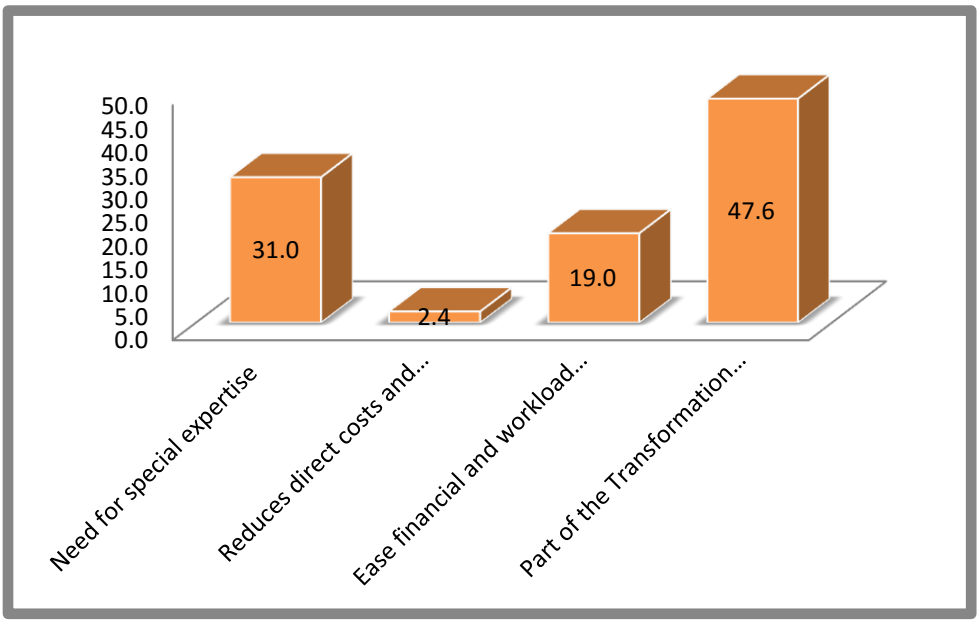

Figure 4. 10: Reason of giving works to MSEs

4.3.3.2. Type Of Construction Contract

From the data collected the practice of appointment MSEs is done by the client and client's agent. This is different from the practical works contract widely used in the construction industry. It is customary that a contract is awarded to a main contractor and the contractor execute the main work by himself in doing so he might give some parts of the works to any entities or a group of individuals which is called subcontractors. There are three types of subcontracting: domestic subcontract, nominated subcontract and selected subcontract.

- Domestic subcontractor is a subcontractor appointed by the main contractor at his discretion.

- Nominated subcontractor is a subcontractor nominated by the employer, which the contractor is obliged to appoint as a subcontractor.
- Selected subcontractor is the subcontractor selected by the main contractor in consultation with the employer as regards to the requirements of the contract.

However, in case of public building projects the employer breaks down the work and gives it to different subcontractors (MSE-1), with the capacity of the government consultant and main contractor supervise the works

4.3.3.3. The current Construction Contract unit pricing system

Figure 4.11 illustrates in percent the practice of pricing system used for determining the price. It was realized that 9.5% of respondents said that Fixed Price, 26.2% of respondents said that it is by tender and 64.3%of respondents said that it is by both tender and fixed pricing system.

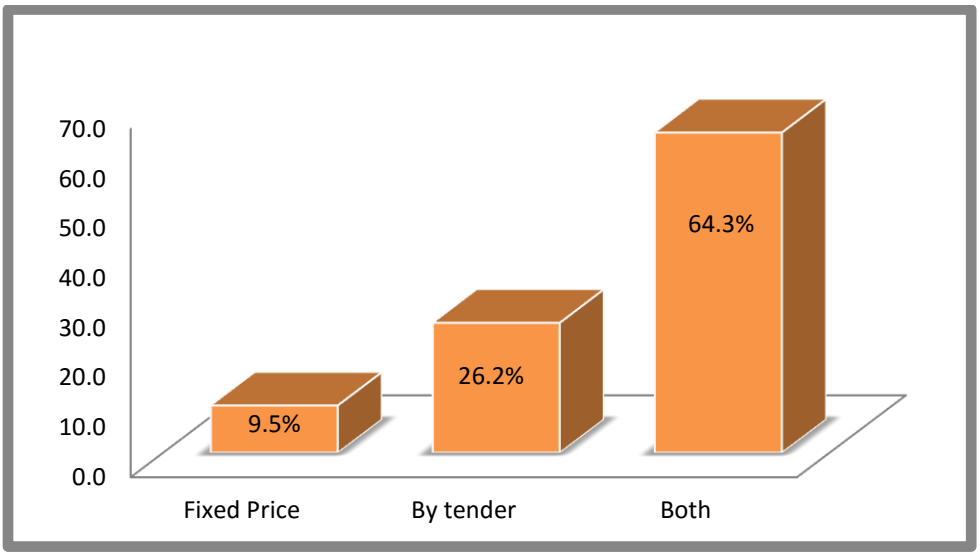

Figure 4. 11: Unit pricing system of MSEs

For the preference of the unit pricing system most of the respondent chosen fixed because in the tenders MSEs inter a reduced price which is not practical for doing the work. This is different of the stated on Wondwossen (2014) stated of the World Bank's study indicated that the fixed pricing system created risks for MSEs since the contract doesn't compensate for rising prices. And it recommended revising contracts and introducing systematic method to compensate for price escalations.

4.3.4. Challenges Faced By Stakeholders

According to Maturana (2007), in as much as subcontractor management has been yielding better outcomes, there is also the tendency for challenges to be encountered. The study is assessed by categorizing the challenges into five main areas. The first category was the challenge with respect to main contractor, the second is the challenge with respect to the MSEs, the third is the challenge with respect to the government consultant, the fourth is the challenge with respect to the client and, the fifth is the challenge with respect to the contract documents related challenges where the MSEs are working under the management of main contractor and government consultant in public building projects. The challenges are ranked by using the mean value. The factor respondents rated with the indicating how significant each challenge by strongly disagree=1, Disagree=2, Neutral =3, Agree =4, strongly agree =5.

4.3.4.1. Challenges of the main contractor

Table 4.2 illustrates the challenges encountered in respect to the main contractor in the current situation where the MSEs are working under the management of main contractor and government consultant in public building projects.

With mean value of 3.60 main contractors lack of managerial skill of main contractor is the firstly ranked challenge encountered. The obtained results agree with Hiwot (2012) who stated thatconstruction Bureaur and the consultant agree that many contractors lack management skill in public building construction while also Maturana (2007) have stated that subcontractor management has achieved remarkable results when it performed correctly but may also hinder project progress if performed inaccurately

With mean value of 3.45 main contractors lack of commitment to follow up MSEs activities is the second raked challenge encountered. This emphasizes that the follow up of MSEs are not that much and the number of MSEs in a single project are many and makes it difficult to manage. The obtained results agree with Assefa (2014) who stated that MSEs have a number of challenges that hindered them to fully operate and bring change one of them is poor follow up.

With mean value of 3.26 main contractors attitude toward MSEs is the main challenge encountered ranked at number three. This emphasizes that the challenge where the attitudes towards the MSEs are not positive. The obtained results agree with Berihu *etal* (2014) who stated attitudinal problems of the private sector towards MSEs are reflected more importantly in the way that MSEs are crowding out the private investors of which is more visible in the construction sector with governmental support packages that prioritize MSEs have left the private investors to be more antagonistic towards MSEs..MoUDH (2016) states that the attitude that considers engagement in MSEs a sign of poverty and backwardness and discounts their potential role.

Table 4. 2: Challenges of main contractor

No	Challenges	Frequency					Mean	Std. Deviation	Rank
		1	2	3	4	5			
1	Main contractor Attitude toward Micro and small enterprises	5	6	10	15	6	3.26	1.23	3
2	Low experience and low capability of main contractor	7	9	17	9	0	2.67	1.00	7
3	Lack of main contractor commitment to follow up Micro and small enterprises activities	4	6	9	13	10	3.45	1.27	2
4	Lack of main contractor commitment with project schedule	11	10	12	7	2	2.50	1.19	9
5	Lack of managerial skill of main contractor	5	2	10	13	12	3.60	1.29	1
6	Lack of main contractor Previous experience with Micro and small enterprises	12	19	10	1	0	2.00	0.80	13
7	Main contractor unrealistic contract price	8	10	15	7	2	2.64	1.12	8
8	Main contractor Schedule conflict with Micro and small enterprises	20	6	8	7	1	2.12	1.25	12
9	Main contractor financial capacity	7	12	12	7	4	2.74	1.21	5
10	Main contractor involvement in several project	8	14	14	5	1	2.45	1.02	10
11	Main contractor lack of understanding the contract documents	3	14	13	10	2	2.86	1.03	4
12	corruption behaviors of main contractor	10	12	6	9	5	2.69	1.37	6
13	Lack of safety considerations given by main contractor	12	17	9	3	1	2.14	1.00	11

4.3.4.2. Challenges of micro and small enterprises

Table 4.3 illustrates the challenges encountered in respect to the MSEs in the current situation where the MSEs are working under the management of main contractor and government consultant in public building projects.

With mean value of 3.81 MSEs attitudeof dependency syndrome is the main challenge encountered ranked at number one. The obtained results agree with MoUDH (2016) who stated that one of the challenge MSEs is negative attitude of dependency syndrome which is common and is expressed in an expectation of receiving subsidies and charity rather than working and investing in one's own future.

With mean value of 3.71MSEs low contract price is the second ranked challenge encountered. This emphasizes that the low unrealistic contract price makes it difficult to execute and finish the activities with the required quality standard.

With mean value of 3.55MSEs lack of work qualityis thirdly ranked challenge encountered. This emphasizes that there is a work quality problem which agree with Hiwot (2012) who stated that the number of MSEs and their capacity make produce less quality work.

With mean value of 3.29 MSEs lack qualification and experience fourthly ranked challenge encountered where. The obtained results agree with Addisu (2013) which stated that one of the challenge faced by MSEs are limited skills in construction management which inhibit the development of MSEs that undermine the growth of MSEs. Further as of Weldegbriel (2012) stated that previous experience is one of the

challenge of MSEs. According to Hiwot (2012) MSEs on the other hand lack both technical and managerial know how makes them incapable to do quality work.

With mean value of 3.26 lack of work specialization of MSEs fifthly ranked challenge encountered. This emphasizes that, there is specialization problem which disagree with Wondwossn (2014) how stated that specializing in specific task may hinder MSEs to operate and compete.

With mean value of 3.07 corruption behaviors of MSEs sixthly ranked challenge encountered. The obtained results agree with Addisu (2013) the challenge faced by MSEs is prevalence of unethical conduct amongst some of the stakeholders where MoUDH (2016) states that one of the challenges inhibit the development of MSEs that undermine the growth of MSEs corruption behaviors.Further Cidb (2013) a number of new sub-contractors entrants into the industry, have a materialistic are only in it to make a quick buck.

Table 4. 3: Challenges of Micro and small enterprises

No	Challenges	Frequency					Mean	Std. Deviation	Rank
		1	2	3	4	5			
1	corruption behaviors of Micro and small enterprises	6	9	9	12	6	3.07	1.30	6
2	Lack of work quality	2	5	12	15	8	3.55	1.13	3
3	Micro and small enterprises unrealistic low contract price	2	2	10	20	8	3.71	0.99	2
4	Micro and small enterprises attitude of dependency syndrome	0	4	10	18	10	3.81	0.92	1
5	Micro and small enterprises lack qualification and experience	4	9	9	11	9	3.29	1.29	4
6	Micro and small enterprises Commitment to specification	9	10	14	8	1	2.57	1.11	9
7	Micro and small enterprises lack of commitment with project schedule	10	12	12	6	2	2.48	1.15	10
8	Lack of proper institutional support for Micro and small enterprises	2	11	19	8	2	2.93	0.92	8
9	Stiff competition among Micro and small enterprises	2	11	19	7	3	2.95	0.96	7
10	Future Prospects of work for Micro and small enterprises	5	18	15	4	0	2.43	0.83	11
11	Lack of work Specialization of Micro and small enterprises	5	6	10	15	6	3.26	1.23	5
12	Lack of safety considerations given by Micro and small enterprises	15	11	7	6	3	2.31	1.30	12

4.3.4.3. Challenges of client

Table 4.4 illustrates the challenges encountered in respect to the client in the current situation where the MSEs are working under the management of main contractor and government consultant in public building projects.

With mean value of 3.36 the client taking time to issue payment as a challenge ranked at number one. The obtained results agree with Addisu (2013) and MoUDH (2016) who stated that MSEs face financing problems. This finance problem is mostly due to late payment by clients and lack of advance working capital [Addisu, 2013].Further according to Cidb (2013) delayed payments, whether from the main contractors or from the client, are seen as the most critical issue facing subcontractors in the industry. With a mean value of 3.12 The client delay in possession of site is secondly ranked while the challenge of budget by client which is ranked at number three with a value of with mean value of 3.07 ranked third.

Table 4. 4: Challenges of client

No	Challenges	Frequency					Mean	Std. Deviation	Rank
		1	2	3	4	5			
1	The client taking time to issue payment	2	7	13	14	6	3.36	1.08	1
2	The client inefficient budget	4	9	13	12	4	3.07	1.13	3
3	The client Delay in possession of site	1	7	22	10	2	3.12	0.83	2

4.3.4.4. Challenges of Government consultant

Table 4.5 illustrates the challenges encountered in respect to the Government Consultant in the current situation where the MSEs are working under the management of main contractor and government consultant in public building projects.

With mean value of 3.31 the government consultant fixing unrealistic duration of contract ranked at number one. With mean value of 3.10thegovernment consultant lack of supervisor skill is the second ranked challenge. The obtained results agree with Hiwot (2012) who stated that the number of MSEs and their capacity make supervision difficult.

With mean value of 3.07 lack of quality and clarity of design drawing and specification challenge ranked at number three. The obtained results agree with Al-Hammad (1992) and Alinaitwe *etal*. (2007) ability to execute the construction works effectively is contingent on the clarity of working drawings and specifications provided.

Table 4. 5: Challenges of government consultant

No	Challenges	Frequency					Mean	Std. Deviation	Rank
		1	2	3	4	5			
1	lack of quality and clarity of design drawing and specification	3	8	16	13	2	3.07	1.00	3
2	Government consultant lack of Supervisor skill	5	9	11	11	6	3.10	1.25	2
3	Government consultant lack of understanding the condition of contract	12	10	13	4	3	2.43	1.21	6
4	Government consultant failure to provide necessary clarifications of the drawings	9	15	13	4	1	2.36	1.01	7
5	Government consultant taking time in approving payments	9	13	13	5	2	2.48	1.11	5
6	Government consultant fixing unrealistic no clear duration of contract	6	6	9	11	10	3.31	1.37	1
7	tendering process time taking	8	10	12	8	4	2.76	1.25	4

4.3.4.5. Contract documents and management related challenge

Table 4.6 illustrates the challenges encountered in respect to the Contract Documents and Management Related in the current situation where the MSEs are working under the management of main contractor and government consultant in public building projects.

With mean value of 3.5 the lack of direct contract between main contract and Micro and small enterprises ranked at number one. This agree with Hiwote (2012)which states that the contract signed have a unique characteristics where subcontractors or MSE are assigned by the client, the main works contract is signed by three parties, Thus, the works contract is cooperated contracts signed between the client, the contractor and MSEs. The contractor's main responsibility is to construct structures while the main duties of MSEs are installation of building fixtures and utilities and painting works. The contractor is entitled to 5% of management fee for managing the subcontractor (MSE-1) under his supervision and also stated that different contractual relationship makes the project big and complex

With mean value of 3.45 lack of clear understanding of the contract conditions is the second ranked challenge encountered. Also with mean value of 3.45having many number of Micro and small enterprises in a project where the MSEs challenge ranked at second. The obtained results agree with Wondwossen (2014) who stated that coordinating activities between MSEs and Large contractors is a critical challenge of the public building project. Further Richard (2016),due to multiple subcontractors there is challenges in communication and coordination during construction include growing errors in communication.

With mean value of 3.05 challenge of effectiveness of communication by stakeholders ranked at number four. The obtained results agree with Richard (2016),Proper communication among all project participants has been cited as vital and crucial to the timely project completion, noted that successful executing of a construction project is subject to effective communication among project participants. According to Hiwot (2012) in the eyes of the contractors, communicating with the MSEs is difficult while MSEs perceive they have good relation with the contractors. These varying opinions of stakeholders in the communication flow reveal that there is a communication gap between stakeholders involved in the project.

Table 4. 6: Contract Documents and Management Related Challenge

No	Challenges	Frequency					Mean	Std. Deviation	Rank
		1	2	3	4	5			
1	Challenge of Effectiveness of communication by stakeholders		13	15	13	1	3.05	0.85	4
2	Lack of clear understanding of the contract conditions	1	6	16	11	8	3.45	1.04	3
3	Having many number of Micro and small enterprises in a project	3	4	14	13	8	3.45	1.13	2
4	Lack of direct contract between main contract and Micro and small enterprises	5	6	6	13	12	3.50	1.37	1

4.3.4.6. Top five challenges of stake holders

As of Figure 4.12 shows the possible challenges with their presence in the Addis Ababa public construction industry when works are given to Micro and small enterprises under the management of main contractor and government consultant in public building projects. Thus Table 4.7 shows the five topmost challenges stated from first to fifth consecutively are MSEs attitude of dependency syndrome, unrealistic low contract price, lack of managerial skill of main contractor, lack of work quality of MSEs and lack of direct contract between main contract and Micro and small enterprises.

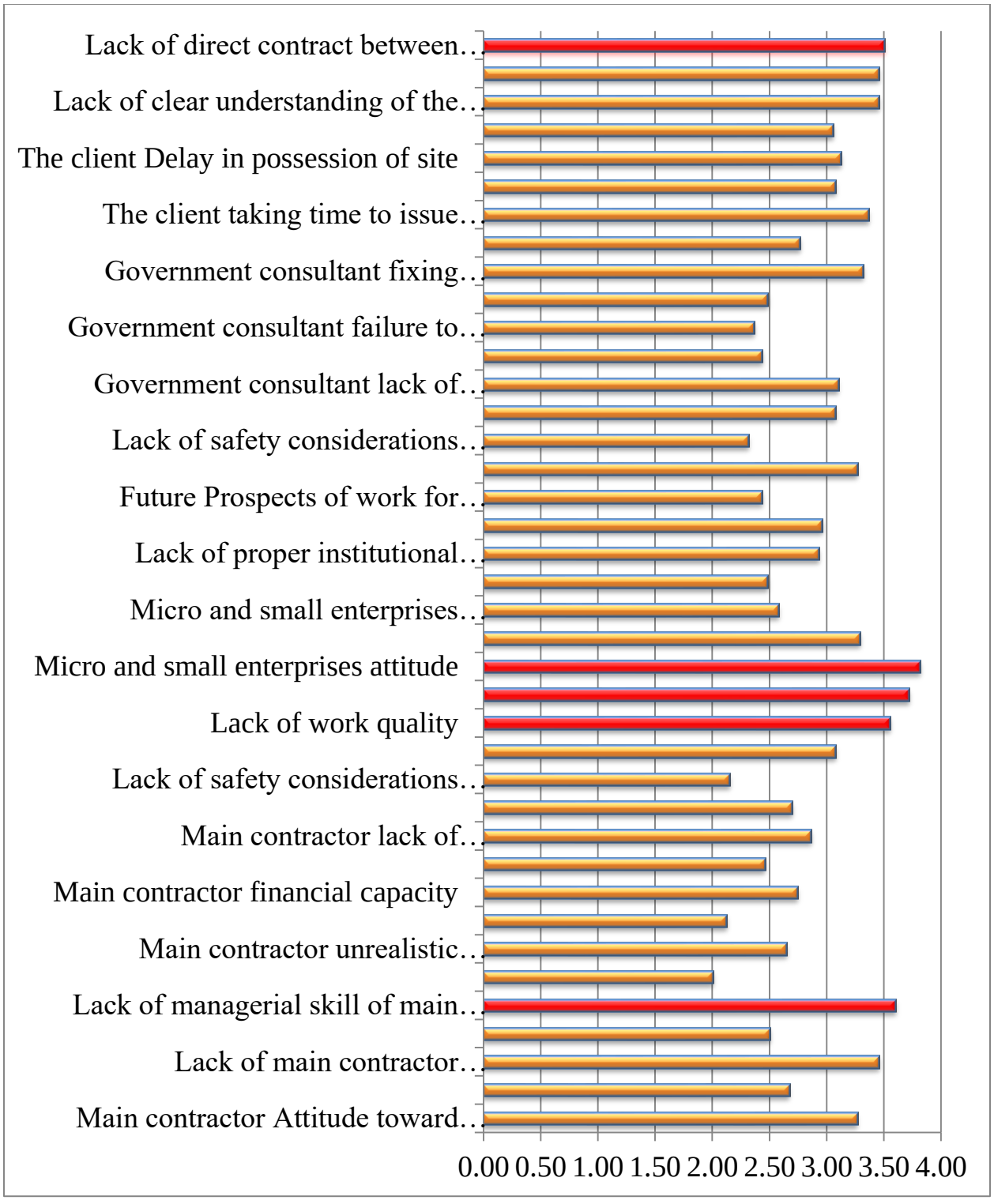

Figure 4. 12: Challenges faced in Addis Ababa Building Construction Industry

Table 4. 7: Top five challenges of stake holders

No	Challenges	Frequency					Mean	Std. Deviation	Rank	category
		1	2	3	4	5				
1	Micro and small enterprises attitude of dependency syndrome	0	4	10	18	10	3.81	0.92	1	MSEs
2	Micro and small enterprises unrealistic low contract price	2	2	10	20	8	3.71	0.99	2	MSEs
3	Lack of managerial skill of main contractor	5	2	10	13	12	3.60	1.29	3	Main contractor
4	Lack of work quality of MSEs	2	5	12	15	8	3.55	1.13	4	MSEs
5	Lack of direct contract between main contract and Micro and small enterprises	5	6	6	13	12	3.50	1.37	5	Contract Documents

4.4. CASE STUDY

The project listed below focuses on the construction of public buildings where MSEs are working under the provision of main contractor and government consultant.

4.4.1. Case Study One

Employer: -Bole sub city MSEs Development Bureau

Consultant: -Addis Ababa administration Bole sub city government and public institutions design and construction core process

Project: -Construction of G+4 Shoe Room Building at Woreda 10

Intended completion date:-180 calendar days

Work executed to date:-90%

- **Contract with Main Contractor**

Contractor: -Seyfe Wondie Building Contractor

Contract amount: -8,741.686.77 ETB

Date of signing contract: -February 13, 2012 GC

Work consists of:

- ✓ Sub structure (Excavation, Concrete, Septic tank) and super Structure (concrete, steel, structure and roofing)
- ✓ Guide, assists and supervision the sub-contractors of the building (Micro and small enterprises)

- **Contract with MSEs**

Table 4. 8: Case study one MSEs contract description

Work	Wing	Contractor	Contract amount	Contract time	Date of signing contract(G.C)
HCB work	R	Degagessa Engineering BC	675,261.16	45 Calendar days	April 28,2013
	L	YewulSew and Almaz GC	442,485.50	45 Calendar days	April 28,2013
Finishing work	R	Simon Moges construction	Main:-1,045,120.00 Suppl-261,210.69	45 Calendar days	June 6,2013
	L	Aymud Construction plc	1036322.50 Suppl-160,005.85	45 Calendar days	June 6,2013
Metal Work	R	Aklitu Asemlash Metal Works	758,220.87	45 Calendar days	June 6,2013
	L	Amaniael Metal works	715,803.12	45 Calendar days	June 6,2013
Flooring work	R	Kider and mokbil building works	1,331,470.00	45 Calendar days	May 23,2013
	L	Nahu Contractor	1,326,180.00	45 Calendar days	May 23,2013
Carpentry work	R	Hrege Construction	304,880.00	45 Calendar days	June 19,2013
	L	Reta and Zinash Wood and Metal work	300,543.00	45 Calendar days	June 19,2013
Celling work	R	Armias and Generu GC	218,680.00	45 Calendar days	June 6,2013
	L	Minalu Tadese GC	248,270.00	45 Calendar days	June 6,2013
Plastering work	R	Fayori and Samson GC PLC	983,281.12	50 Calendar days	March 4,2013
	L	Noh Construction	100,000.45	50 Calendar days	March 4,2013
Sanitary work	R	Tomas Nigist and Friend gc	898,565.47	60 Calendar days	June 19,2013
	L	Haiku Asefa and Desalgh Construction	901,432.00	60 Calendar days	June 19,2013
Electrical work	R	TTBM GC	590,166.52	60 Calendar days	June 19,2013
	L	TM Construction	580,111.00	60 Calendar days	June 19,2013

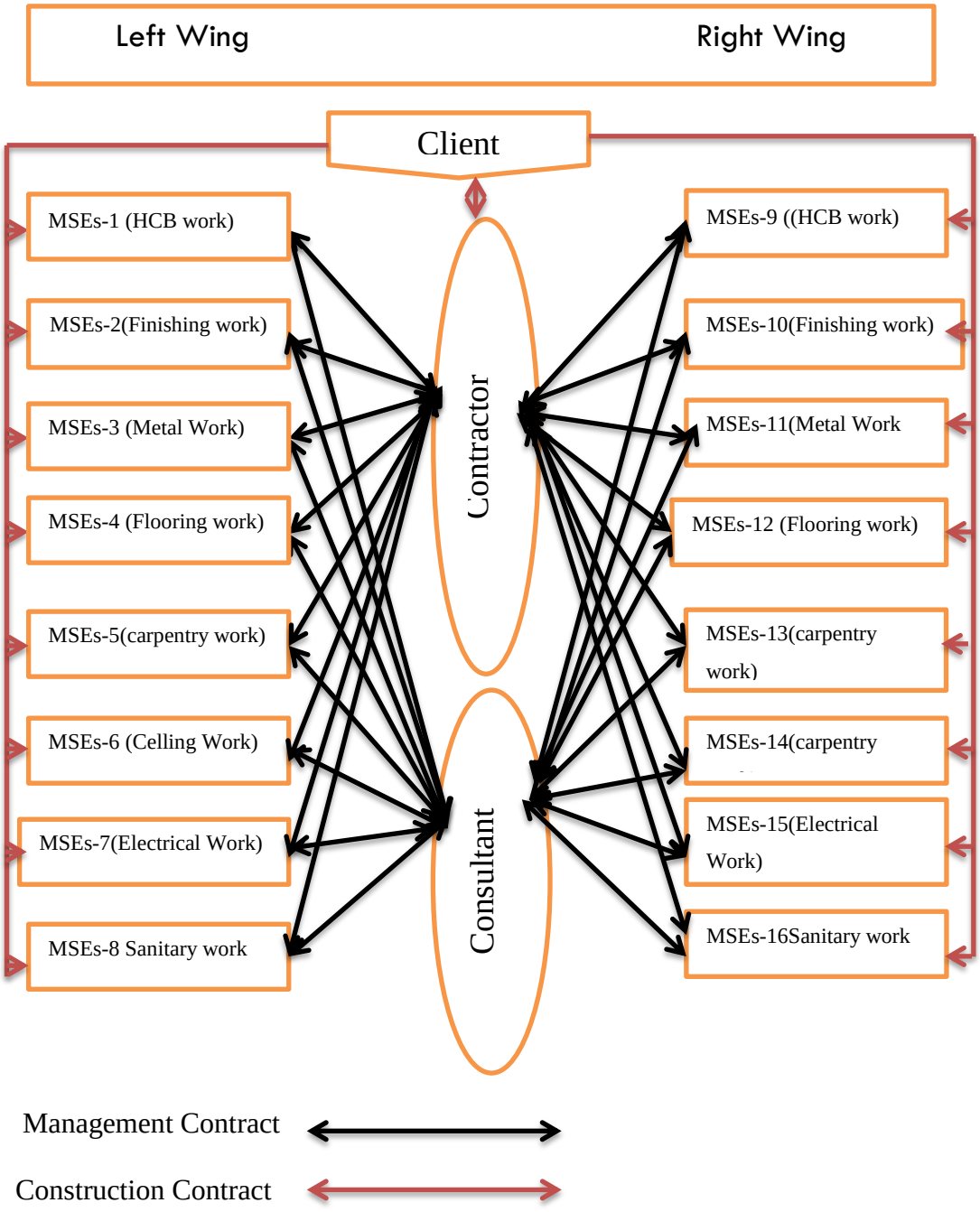

Figure 4. 13: Case study one work chart

- Challenges faced in executing the contract
  - ✓ Difficulty in management of to many number of MSEs .
  - ✓ Work quality problem by MSEs.
  - ✓ MSEs attitude,
  - ✓ MSEs have to wait for the other MSEs to finish their work in order to start their project.

- ✓ Not enough skilled manpower assigned by the MSEs.
- ✓ MSEs living the site after taking the advance payment.
- ✓ Lack of understanding of responsibility by main contractor

4.4.2. Case Study Two

Employer: -Bole sub city Education Bureau

Consultant: -Addis Ababa Administration Bole Sub City Government and Public Institutions Design and Construction Core Process

Project: -Construction of G+4 Gerji school woreda 13

Intended completion date 180 calendar days

Work executed to date:-81 %

- **Contract with Main Contractor**

Contractor: -Esayas Endale Building Contractor

Contract amount: -:-4,322,161.24ETB

Sign Contract:-June 25, 2014 GC

Work consists of:

- ✓ Sub structure (Excavation, Concrete, Septic tank) and super Structure (concrete, steel, structure and roofing)
- ✓ Guide, assists and supervision the sub-contractors of the building (Micro and small enterprises)

- **Contract with MSEs**

Table 4. 9: Case study two MSEs contract description

work	Contractor	Contract amount	Contract time	Date of Signing contract(G.C)
HCB work	Biruck Ermias and friend BC	403,645.40	45 Calendar days	June 23,2015
Finishing work	Yod path GC	992,719.58	45 Calendar days	June 23,2015
Flooring work	DL GC	641,855.13	45 Calendar days	June 23,2015
Metal work	Akililu Asuelash	552,174.34		June 23,2015
Sanitary work	Million and Feton sanitary installation	110,527.65	60 Calendar days	June 23,2015
Electrical	Lemelem and Adungaw Electric work	328,808.45	60 Calendar days	June 23,2015

- Challenges faced in executing the contract
  - ✓ MSEs conflict of work coordination.
  - ✓ Work quality problem by MSEs.
  - ✓ MSEs have to wait for the other MSEs to finish their work in order to start their project.
  - ✓ Not enough skilled manpower assigned by the MSEs.
  - ✓ Change orders.
  - ✓ MSEs attitude,
  - ✓ Lack of understanding of responsibility by main contractor

4.4.3. Case Study Three

Employer: - Bole sub city Education Bureau

Consultant: -Addis Ababa Administration Bole Sub City Government and Public Institutions Design and Construction Core Process

Project: -Beshale Construction of school at woreda 8

Intended completion date 180 calendar days

Work executed to date:-73 %

- **Contract with Main Contractor**

Contractor: -Sofoniyas Getachewu Building Contractor

Contract amount:-6,004,575.44ETB

Sign Contract: -July 10, 2014 GC

Work consists of:

- ✓ Sub structure (Excavation, Concrete, Septic tank) and super Structure (concrete, steel, structure and roofing)
- ✓ Guide, assists and supervision the sub-contractors of the building (Micro and small enterprises)

- **Contract with MSEs**

Table 4. 10: Case study three MSEs contract description

work	Contractor	Contract amount	Contract time	Date of Signing contract(G.C)
HCB work	Faskana Taye Building Contractor	299,034.5	45 Calendar days	June 20,2015
Finishing work	Aedom and henok Building Contractor	538,632.22	45 Calendar days	June 20,2015
Flooring work	Tesfaye Alemu Building Contractor	619,537.36	45 Calendar days	June 20,2015
Metal work	Solemon Thame Metal Work Contractor	552,174.34	45 Calendar days	June 20,2015
Sanitary work	Mesfen Hayelu Sanitary Worker	310,925.5	60 Calendar days	June 20,2015
Electrical	Behayilu and his Friends	344,328.93	60 Calendar days	June 20,2015

- Challenges faced in executing the contract
  - ✓ MSEs living the site after taking the advance payment.
  - ✓ Difficulty in management of to much number of MSEs.
  - ✓ Lack of understanding of responsibility by main contractor
  - ✓ MSEs attitude,
  - ✓ Work quality problem by MSEs.
  - ✓ Change orders.

- ✓ MSEs have to wait for the other MSEs to finish their work in order to start their project.
- ✓ Not enough skilled manpower assigned by the MSEs.

4.4.4. Case Study Four

Employer: - Bole sub city Education Bureau

Consultant: -Addis Ababa Administration Bole Sub City Government and Public Institutions Design and Construction Core Process

Project: -Young Centre Constructionat woreda7

Intended completion date 180 calendar days

Work executed to date:-98 %

- **Contract with Main Contractor**

Contractor: -Ayfs Construction

Contract amount: -:-2,819,689.00ETB

Sign Contract:-May 23, 2013 GC

Work consists of:

- ✓ Sub structure (Excavation, Concrete, Septic tank) and super Structure (concrete, steel, structure and roofing)
- ✓ Guide, assists and supervision the sub-contractors of the building (Micro and small enterprises)

- **Contract with MSEs**

Table 4. 11: Case study four MSEs contract description

work	Contractor	Contract amount	Contract time	Date of Signing contract(G.C)
HCB work	Fkire Mariam and his friends Building Contractor	318,752.93	45 Calendar days	March 25,2014
Finishing work	Mihiret and Asrat Building Contractor	580,000.00	45 Calendar days	March 25,2014
Flooring work	HabtamuSenbete Building Contractor	380,000.00	45 Calendar days	March 25,2014
Metal work	Zenebe and Sosna Metal Work Contractor	170,394.94	45 Calendar days	March 25,2014
Sanitary work	Mesfen Hayelu Sanitary Worker	325,350.00	60 Calendar days	March 25,2014
Electrical	Yohanse and Yodit	431,083.76	60 Calendar days	June 23,2015

- Challenges faced in executing the contract
  - ✓ Difficulty in management of much number of MSEs.
  - ✓ MSEs attitude,
  - ✓ Lack of understanding of responsibility by main contractor
  - ✓ MSEs living the site after taking the advance payment.
  - ✓ Work quality problem by MSEs.
  - ✓ MSEs have to wait for the other MSEs to finish their work in order to start their project.
  - ✓ Not enough skilled manpower assigned by the MSEs.

4.4.5. Summary of Case Study

In the projects the main contract has a responsibility of executing sub structure (Excavation, Concrete, Septic tank) and super Structure (concrete, steel, structure and roofing) works and guide, assists and supervision the sub-contractors of the building (Micro and small enterprises) while other works are given to MSEs as a sub-contractor

The most repeated challenges faced in executing the contract include:

- Contractors finding it difficulty of management of to many number of MSEsin a single project
- Government consultant fixing unrealistic duration of contract for executing the work which considers all MSEs involved.
- Lack of understanding of responsibility by main contractor due to the fact that there is no direct contract between contractor and MSE
- MSEs living the site after taking the advance payment after winning the tender by unrealistic price,
- Work quality problem by MSEs by not providing enough skilled manpower by MSEs.,
- MSEs attitude of dependency syndrome

4.4.6. Developed Criteria Prequalification of Construction MSEs

Establishing an effective framework to select subcontractors using the most effective methods is essential. The Selection of the most suitable MSEs contractor for a particular project work is paramount to the success of a construction project. From the practice the bid price has been the most important criterion in the selection of the

MSEs contractor. The initial identification or prequalification of subcontractors who are capable of doing the specific work is essential. Contractor prequalification decision making involves an extensive range of criteria often comprising of both qualitative and subjective information. From the listed challenge from the questioner a prequalification criteria is developed to tackle the challenge for effective construction of building project. In this from the challenges the unrealistic low price is left because it is the qualification after the technical procedure is passed and lack of institutional support and stiff competition are left because they are not factors controlled by the MSEs. As shown in Table 4.12Selection criteria and sub criteria are developed from the challenge faced.

Table 4. 12: Selection criteria and sub criteria

No	Challenge in caw entered the	Selection Criteria	Sub-criteria
1	Micro and small enterprises attitude of dependency syndrome	Bidder Previous Relationship with stockholders	Previous Cooperation Relationship with main contractors
			Previous Cooperation Relationship with client
			Previous Cooperation Relationship with consultant
			Previous Relationship with supplier
			Past record of conflict and dispute
2	Lack of work quality	Bidder Work quality performance	Quality control
			Quality assurance
			Quality management system
			Quality level of projects performance
3	Micro and small enterprises lack qualification and experience	Bidder Qualification, Competence and Experience	Qualification of staff
			Experience of staff
			similar project completed
			Size of past project completed
			Number of projects completed
			Experience in local area
			Overall experience

Continued			
No	Challenge in caw entered the	Selection Criteria	Sub-criteria
4	Lack of work Specialization of Micro and small enterprises	Bidder Work Specialization	Knowledge of particular construction method
			Type of past project completed
			License of work
5	corruption behaviors of Micro and small enterprises cause by finance problem	Bidder financial standing	Financial statement
			Average Annual Turnover
			Financial Resource
			Annual Profit
6	Micro and small enterprises Commitment	Bidder Project Commitment	Present workload and capability to support the current project
			Projects completed on budget
			Number of years in construction
			Company image

Continued			
No	Challenge in caw entered the	Selection Criteria	Sub-criteria
7	Micro and small enterprises lack of commitment with project schedule	Bidder Commitment with project schedule	Proposed project time schedule
			Projects completed on time
8	Future Prospects of work for Micro and small enterprises	Bidder Future Prospects of work	Labor and equipment
			Number of staff
			Adequacy of plant resources
			Number of direct workers available for the project
			Organizational structure
9	Lack of safety considerations given by Micro and small enterprises	Bidder safety considerations	Health and safety records
			Safety performance
			Management safety accountability
			Insurance policy
			Occupational safety and health administration
			Management safety accountability

4.4.7. Weighting Indices

Figure 4.13 illustrates that from the selected criteria's developed take the considered of the presence of the challenges in the industry that is stated in the mean. Thus, from the mean a weighting index is developed from each criterion.

Table 4. 13: Weighting indices for selection criteria of MSE

No	Selection Criteria of MSEs	Score	Mean Score	weighting indices
1	Bidder Previous Relationship with stockholders	A	3.81	0.14
2	Bidder Work quality performance	B	3.55	0.13
3	Bidder Qualification, Competence and Experience	C	3.29	0.12
4	Bidder Work Specialization	D	3.26	0.12
5	Bidder financial standing	E	3.07	0.11
6	Bidder Project Commitment	F	2.57	0.10
7	Bidder Commitment with project schedule	G	2.48	0.09
8	Bidder Future Prospects of work	H	2.43	0.09
9	Bidder safety considerations	I	2.31	0.09
		Total	26.76	1.00

4.4.8. Developed MSEs Contractor Evaluation Criteria

Figure 4.14 shows the format that is developed using Microsoft Excel in calculating aggregate score of MSEs contractors. In selection the contractors are compared based on the score as pre-qualification. By using the weight we will have aggregate calculation formula of

ACrij=(A*0.14)+(B*0.13)+(C*0.12)+(D*0.12)+(E*0.11)+(F*0.10)+(G*0.09)+(H*0.09)+(I*0.09)

Table 4. 14: Selection of MSEs Contractor Evaluation criteria

Selection of MSEs Contractor Evaluation Criteria			
Client: - _____ Date:…/…../…..			
Consultant:-_____			
Project:-_____			
I	**Legal Qualification of the Bidder**		
	Criteria	**Requirement**	**Bidder**
1	Nationality	Nationality Should be Ethiopian	Must meet requirement
2	conflict of interest	No conflict of interest	Must meet requirement
3	Registration in the PPPA's Suppliers List	Having been registered in the Public Procurement and Property Administration Agency's Suppliers List	Must meet requirement
4	Debarred by decision of the PPPA	Not having been debarred by decision of the Public Procurement Agency from participating in public procurements	Must meet requirement
5	Valid trade license or business organization registration certificate	Having been submitted valid trade license or business organization registration certificate issued by the country of establishment	Must meet requirement
6	VAT registration certificate	Having been submitted VAT registration certificate	Must meet requirement
7	Valid tax clearance certificate	Having been submitted valid tax clearance certificate issued by the tax authority	Must meet requirement

Continued									
II	**Calculating ACrj=Aggregate score for contractor**								**Bidder**
No	Criteria for selecting MSEs	weighting indices (1)	MSEs contractor-1		MSEs contractor-2		MSEs contractor-3		
			MSEs-1 Score (2)	AC (1*2)	MSEs-2 Score (2)	AC (1*2)	MSEs-3 Score	AC (1*2)	
1	Bidder Previous Relationship with stockholders	0.14							Has to meet 70% of requirement
2	Bidder Work quality performance	0.13							Has to meet 70% of requirement
3	Bidder Qualification, Competence and Experience	0.12							Has to meet 70% of requirement
4	Bidder Work Specialization	0.12							Has to meet 70% of requirement
5	Bidder financial standing	0.11							Has to meet 70% of requirement
6	Bidder Project Commitment	0.10							Has to meet 70% of requirement

Continued (Calculating ACrj)									
No	Criteria for selecting MSEs	weighting indices (1)	MSEs contractor-1		MSEs contractor-2		MSEs contractor-3		**Bidder**
			MSEs-1 Score (2)	AC (1*2)	MSEs-2 Score (2)	AC (1*2)	MSEs-3 Score	AC (1*2)	
7	Bidder Commitment with project schedule	0.09							Has to meet 70% of requirement
8	Bidder Future Prospects of work	0.09							Has to meet 70% of requirement
9	Bidder safety considerations	0.09							Has to meet 70% of requirement
ACrj=Aggregate score for contractor									

III	**Evaluation for selection of MSEs Contractor firms**				
No	MSEs Contractores	aggregate score for contractor (ACrj) (1)	Maximum aggregate score for contractor (ACjmax) (2)	Unified aggregate contractor score(UACrj) (1/2)	Rank
1	MSEs-1				
2	MSEs-2				
3	MSEs-3				

As of Table 4.14 the Contractor Evaluation Criteria have three steeps

- First step:- Cheeks the Legal Qualification of the Bidder
- Second step:- Cheeks Calculates each ACrj=Aggregate score for contractor(Cheek that the contractor fulfils at least 70 % of the requirement)
- Third step:-Select and a contractor which qualify for next evaluation

CHAPTER FIVE
CONCLUSION AND RECOMMENDATIONS

5.1. INTRODUCTION

This chapter includes the conclusions and recommendations that would help in determining the practice and challenges of subcontracting works to MSEs. The findings were based on the research questions and case studies. The chapter comprises conclusion of the findings and recommendation.

5.2. CONCLUSION

Based on the findings the following conclusions are drawn:

- Giving work to MSEs is a frequently practice in public building projects in Addis Ababa where works are given to them in different trades. Significant portions between 46% to 60% part of projects works are usually given to them.

- Most MSEs are not specialized sub-contractors in a single field of work. They do all kind of work which makes them advantageous to participate in different project while hindering their development in the progress in specific line of works.

- As of the transformation plan of the government MSEs are benefiting from the job created for them while the clients are beneficial for reducing their cost.

- Works are given to MSEs by using both fixed price and tender system. They tend to submit an unrealistic reduced price to get the job in tenders which uses the least price system for evaluation.

- Two contract agreements one between the client and the contractor and the other between client and MSEs are signed. The contractors have additional responsibility of managing MSEs in collaboration with government consultants.

- MSEs have no direct clear line of contract relation which is different from the practice of works contract widely used in the construction industry like domestic subcontract, nominated subcontract and selected subcontract.

- The main challenges faced when works are given to MSEs under the management of main contractor and government consultant in public building projects include MSEs attitude of dependency syndrome, unrealistic low contract price, lack of managerial skill of main contractor, lack of work quality by MSEs, Lack of direct contract between main contract and Micro and small enterprises and government consultant fixing unrealistic contract time for executing the work which consider all micro and small enterprises.

5.3. RECOMMENDATIONS

In the light of the findings of the research, the following recommendations are proposed:

- A specialized varies categories sub-contracting system should be considered that is different from the existing categorization of MSEs contractors. This would help in the development of capacity of MSEs in their various specialties and aid clients as well as main contractors in managing and getting work done by quality.

- The reason of sub-contracting should be transformed to the need for input of specialist knowledge, skills and special methods or equipment requirement other than the need for job creation.

- A practice of works contract widely used in the construction industry like domestic subcontract, nominated subcontract and selected subcontract should be considered in giving works to MSEs. This relation creates a standard practice where responsibilities of stake holders are known and there is developed experience of other countries to learn from.

- Works should be given to MSEs by considering the engineering estimate in tenders or while using the fixed unit price should take consideration of site condition and compensate for rising prices.

- MSE contracting firms should change their attitude of dependency syndrome and be evaluated for the work they execution. This should develop believe in themselves and became well equipped big construction contractors.

- Contractors should develop the skill of management of dealing with many subcontractors (MSEs) in a single project by trainings and should assign well skilled personnel on sites.

- Training programs should be offered to MSEs in different trades of work by the government so that they can provide skilled manpower and perform quality work.

- Government should fix a realistic duration of contract which considers all MSEs and contractors by considering the sequence of works in which each MSEs will be involved in the project so that they work in coordination.

- A model which takes into account a decision alternative with respect to a number of the alternative's attributes is recommended that take in to consideration bidders previous relationship with stockholders, work quality performance, qualification, competence, experience, work specialization, financial standing, project commitment, commitment with project schedule future prospects of work and safety considerations for selecting a suitable MSEs contractor for a particular project work.

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Appendix

Appendix-1: Sample Questionnaire

QUESTIONNAIREFOR

THE PRACTICE AND CHALLENGES OF SUBCONTRACTING TO MICRO AND SMALL ENTERPRISES: THE CASE OF ADDIS ABABA PUBLIC BUILDING

Dear Sir / Madam

Please fill in the required information in the attached questionnaire that aims to identify the practice and challenges of subcontracting works to Micro and Small Enterprises in Addis Ababa public building projects. The objectives of the study are to:

- To assess the current practice of Micro and Small Enterprises in Addis Ababa public building projects.
- To identify challenges of Micro and Small Enterprises in relation with subcontracting works in Addis Ababa public building projects.

This Research is part of the Master Study in the field of Construction Management at Addis Ababa Science and Technology University (AASTU).

I appreciate your effort in answering the questions in the questionnaire, knowing that the given information will be used for the purpose of the scientific study only and will be treated confidentially.

Thank you for your cooperation.

Hurji Anbessie

For any questions, please call Mobile No.: 0910134920, Email: wa.hurji@gmail.com

I. Section One: General Information

1. Company Name (Optional) _____

2. What type of organization do you belong

   Consultant □ Main Contractor □ Subcontractor □ Client □

3. Your position/Job Title

Project Manager □ Supervising Engineer □ Quantity Surveyor □

Structural Engineer □ Resident engineer □ Other (please specify)_____

4. How long have you been working in the category of organization chosen in question 2 above?

< 5 years □ 6 – 10 years □ 11 – 15 years □>16 years □

5. How beneficial are Micro and small enterprises in construction of public building industry?

Highly unbeneficial □ Unbeneficial □ Moderately beneficial □

Beneficial □ Highly beneficial □

For the Micro and Small Enterprises Only

1. Kind of Specialty

HCB Work □ Finishing Work □ Sanitary Work □ Electrical Work □

Metal Work □ Flooring Work □ Carpenter Work □ Ceiling Work □

No specialization □

Others (please specify) _____

For the client, Consultant and Main Contractor Only

1. How many projects have you been involved where Micro and Small Enterprises are involved within the last five years?

>5 □ 6 - 10 □ 11 - 15 □ >16 □

2. If you have the option do you allow the Micro and small enterprises to further continue their work they have been assigned before?

Yes □ No □

Reason behind your decision

_____
_____
_____
_____
_____
_____.

II. Section Two: Extent to which micro Enterprises are working in the public Building Construction Industry.

1. How frequently Micro and small enterprises work in public building construction projects?

Not Frequent □ Less Frequent □ Moderately Frequent □

Frequent □ Very Frequent □

2. On average what percentage of work are given to Micro and small enterprises under the management of main contractor and government consultant?

0- 10% □ 11- 20% □ 21- 30% □ 31- 40% □ Above 41% □

III. Section Three: Reason of appointing and unit pricing system used for Micro and small enterprises which are working in the Building Industry.

1. Reason of given works to Micro and small enterprises under the management of main contractor and government consultant.

Need for special expertise □

Reduces direct costs and overheads □

Ease financial and workload pressures of main contractor □

Part of the Transformation Plan of Ethiopia □

Others (please specify) _____

2. The current practice of appointment Micro and small enterprises is done by

Main contractor choice □

Main contractor from a recommended list of potential subcontractors in the tender document □

Nominated by the client or client's agent □

Others (please specify) _____

3. If you have the option What kind of appointment do you prefer to have _____

Reason behind your decision _____

_____

_____

_____

____.

4. The current unit pricing system used

Fixed Price □ By tenders □ Both □

5. If you have the option what kind of unit pricing system do you prefer _____

Reason behind your decision

_____

_____

_____

_____

IV. Section Four: The challenges faced when works are given Micro and small enterprises under the management of main contractor and government consultant in public building projects.

Below are a number of potential challenges inherent in the current construction industry when Micro and small enterprises work under the management of main contractor and government consultant in public building projects. From your experience, please tick the appropriate cell by indicating how significant each challenge is.

Ranking	Interpretation
1	strongly disagree
2	Disagree
3	Neutral
4	Agree
5	strongly agree

No	Possible Challenges	Ranking				
		1	2	3	4	5
I	**The main contractor**					
1	Main contractor Attitude toward Micro and small enterprises					
2	Low experience and low capability of main contractor					
3	Lack of main contractor commitment to follow up Micro and small enterprises activities					
4	Lack of main contractor commitment with project schedule					
5	Lack of managerial skill of main contractor					
6	Lack of main contractor Previous experience with Micro and small enterprises					
7	Main contractor unrealistic contract price					
8	Main contractor Schedule conflict with Micro and small enterprises					
9	Main contractor financial capacity					
10	Main contractor involvement in several project					
11	Main contractor lack of understanding the contract documents					
12	corruption behaviours of main contractor					
13	Lack of safety considerations given by main contractor					

No	Possible Challenges	Ranking				
		1	2	3	4	5
II	**Micro and small enterprises**					
1	corruption behaviours of Micro and small enterprises					
2	Lack of work quality					
3	Micro and small enterprises unrealistic low contract price					
4	Micro and small enterprises attitude					
5	Micro and small enterprises lack qualification and experience					
6	Micro and small enterprises Commitment to specification					
7	Micro and small enterprises lack of commitment with project schedule					
8	Lack of proper institutional support for Micro and small enterprises					
9	Stiff competition among Micro and small enterprises					
10	Future Prospects of work for Micro and small enterprises					
11	Lack of work Specialization of Micro and small enterprises					
12	Lack of safety considerations given by Micro and small enterprises					

No	Possible Challenges	Ranking				
		1	2	3	4	5
III	**Government Consultant**					
1	lack of quality and clarity of design drawing and specification					
2	Government consultant lack of Supervisor skill					
3	Government consultant lack of understanding the condition of contract					
4	Government consultant failure to provide necessary clarifications of the drawings					
5	Government consultant taking time in approving payments					
6	Government consultant fixing unrealistic no clear duration of contract					
7	tendering process time taking					
IV	**The Client**					
1	The client taking time to issue payment					
2	The client inefficient budget					
3	The client Delay in possession of site					
V	**Contract Documents and Management Related Challenge**					
1	Challenge of Effectiveness of communication by stakeholders					
2	Lack of clear understanding of the contract conditions					
3	Having many number of Micro and small enterprises in a project					
4	Lack of direct contract between main contract and Micro and small enterprises					